

This Report has been cleared for submission to the Board by Programme Manager Marie O'Connor.

Signed: *Gráinne Dylecky*

Date: 12th December 2019



OFFICE OF ENVIRONMENTAL SUSTAINABILITY

INSPECTOR'S REPORT ON AN INDUSTRIAL EMISSIONS LICENCE APPLICATION, LICENCE REGISTER NUMBER P1103-01

TO: DIRECTORS

FROM: Orla Harrington

DATE: 12 December 2019

Applicant: Dairygold Co-Operative Society Ltd and TINE Ireland Ltd.
 CRO number: 4621 (Dairygold) and 588422 (TINE)
 Address: Mogeely, Cork, P25Y996
 Application date: 13 February 2019

Class of activity (under EPA Act 1992, as amended): 7.2.1: The treatment and processing of milk, the quantity of milk received being greater than 200 tonnes per day (average value on a yearly basis).

Category of activity under IED (2010/75/EU): 6.4(c): The treatment and processing of milk only, the quantity of milk received being greater than 200 tonnes per day (average value on an annual basis)

Main CID: Commission Implementing Decision of 12 November 2019 establishing best available techniques (BAT) conclusions for the food, drink and milk industries, under Directive 2010/75/EU of the European Parliament and of the Council.

Other relevant BREF documents and national BAT notes are listed in the appendix of this report.

Activity description: Milk processing and cheese manufacturing plant.

Additional information received: Yes (07 June 2019, 11 July 2019, 27 August 2019, 30 October 2019, 04 November 2019)

No of submissions received: 49

EIS submitted: Yes (with application)

NIS submitted: Yes (with application)

Site visit: 22 October 2019

Site notice check: 12 March 2019

1. Activity description/background

Dairygold Co-operative Society Ltd (hereafter referred to as Dairygold) currently produce over 12,000 tonnes annually, of speciality cheeses for the niche branded market. This activity is licensed by the EPA under Licence Reg No. P0817-01, granted on the 21 April 2011. The installation, first built in 1973, is located on the outskirts of Mogeely, a small village in east County Cork, 10km east of Midleton. The types of cheeses produced include, Jarlsberg, Imokilly and Regato.

To facilitate expansion, Dairygold was granted planning permission by An Bord Pleanála on 24 April 2018 (Planning Ref PL04.249108) for the construction of a new cheese production plant on neighbouring greenfield lands, along with significant upgrades to the existing Dairygold site at Mogeely.

This new cheese plant, while it will share utilities and milk reception facilities with Dairygold, will be independently owned and operated by Norwegian company, TINE Ireland Ltd (TINE) to produce Jarlsberg® cheese for the export market. The scale of the investment by TINE is approximately €80 million. Initially, Dairygold applied for a review (P0817-02) of their existing licence to facilitate this expansion; however, the Agency determined that a person/company cannot carry on a licensable activity under a licence issued to another. On foot of this determination, Dairygold notified the Agency on 28 January 2019 of their intention to withdraw their application for a licence review of P0817-01. Subsequently, Dairygold and TINE (hereafter referred to as Dairygold/TINE or the applicant) made a joint licence application to produce speciality cheeses, which requires the treatment and processing of milk. (See Appendix 1 for a visual overview of exchange of goods and services between Dairygold and TINE). It is the intention of Dairygold to surrender their existing licence (P0817-01) immediately upon receipt of this new licence (P1103-01). The overall processing capacity of the installation is expected to increase threefold (by 2025) as follows:

- Raw milk required will increase from 120,000 tonnes/yr. to 365,411 tonnes/year
- Cheese production will increase from 12,000 tonnes/yr. to 37,500 tonnes/yr.
- Cream removed off site will increase from 30 tonnes/yr. to 63 tonnes/yr.

The existing site occupies an area of approximately 4.5 hectares (ha) between the Kiltha River on the western boundary and the local road between Mogeely and Castlemartyr. The site is essentially divided into two main areas, with administration and production areas in the northern section and the process wastewater treatment plant (WWTP) in the south, approximately 300m from the production area. There is a housing estate and residential dwellings in the immediate vicinity of the installation. The existing site boundary will extend to 7.9 ha once the expansion is complete, as detailed in the site map of the proposed site boundary in red and the existing in blue. (refer to Appendix 2 for maps).

The main activities carried out at the site are raw milk processing and cheese making. The processes and unit operations (existing and future) associated with these activities include: milk intake and storage, raw milk processing (namely separation, and standardisation), processing of the milk into cheese (namely pasteurisation, coagulation, moulding & extruding and brining) and distribution of end products (cheeses) and by-products (liquid whey and cream). The liquid whey undergoes reverse osmosis (RO) filtration to concentrate the whey by removing the water (permeate), before dispatch of whey to the Dairygold Mitchelstown (P0404-02) plant for further processing. The permeate will be treated at the onsite WWTP. The process is described in greater detail in the licence application.

The installation will operate 52 weeks per year, 24 hours a day, 7 days per week. The application stated the plant will have approximately 161 permanent staff when fully operational. Other ancillary activities and utilities include the boilers, natural gas connection, cleaning in place (CIP) systems, cooling, compressed air, onsite WWTP, WWTP sludge handling, storage and laboratories.

2. Licence History

Licence	Details	Date
P0817-01	Original IE licence for Dairygold issued.	21 April 2011
P0817-01	Technical amendments A and B relating to boundary changes and a decrease in stack height for emission point A1-1.	29 June 2018 and 03 January 2019
P0817-02	Applied for a licence review of P0817-01 to incorporate production expansion	26 October 2018
P0817-02	Withdrew intention to review P0817-01	28 January 2019
P1103-01	Dairygold/TINE IE joint licence application	13 February 2019

3. Compliance and Complaints Record

Compliance and complaints under existing licence

The Agency received three complaints in 2019 and six in 2018, mainly relating to noise and odour from the operation of the existing installation under the current licence (P0817-01) and the construction work currently taking place onsite.

There were seven non-compliances issued in 2018 in relation to odour, unapproved alterations to the site, cracked hardstanding at the milk intake area, bunding not meeting capacity requirements, waste storage and emission limit value (ELV) exceedance for suspended solids, from the operation of the Dairygold installation under the current licence reg no P0817-01.

There was one compliance investigation (CI001485) opened on 16 June 2017 to address bunding and pipeline testing and repair, weekly drainage checks onsite and groundwater reporting. An action has been raised on this CI with a due date of 31 January 2020. This is to address the outstanding programme of repairs and retests of the process pipelines and manholes that failed previous integrity testing.

4. Best Available Techniques

BAT for IE installations

Section 86A(3) of the EPA Act 1992 as amended, requires that the Agency shall apply BAT conclusions as a reference for attaching one or more conditions to an Industrial Emissions Directive (IED) licence. When a Commission Implementing Decision (CID) on BAT Conclusions is published, the EPA must ensure that within four years, 'all permit/licence conditions are reconsidered, and where necessary updated' to comply with the BAT conclusions (including BAT associated emission levels (AELs)). In this case, BAT for the installation was assessed against the BAT conclusions contained in the Commission Implementing Decision (CID) of 12/11/2019 establishing best available techniques (BAT) conclusions for the food, drink and milk industries, under

Directive 2010/75/EU of the European Parliament and of the Council (hereafter referred to as FDM BATC) which relates to the treatment and processing of milk where the quantity of milk received is greater than 200 tonnes per day.

With respect to the BAT Conclusions, Dairygold/TINE identified the applicable BATs for their installation and provided information on the techniques employed or to be employed based on the *Final Draft BAT Reference Document in the Food, Drink and Milk Industries, October 2018*. I am satisfied that this assessment is in line with the published FDM BATC. The information supplied by the applicant indicated that the installation can comply with all applicable BATC requirements specified in the CID and will comply with the applicable BATC contained in additional BREF documents. The ELVs set in the RD do not exceed the BAT-AELs as specified in the FDM BATC and can apply from date of grant of licence. The following table sets out a summary of how the BAT conclusions published in the CID have been considered in the licence.

Table 1: Specific Conditions in the RD to address BAT conclusion requirements

Main applicable BAT conclusions for the activity: BAT conclusions for the Food, Milk and Drink Industries	
Additional Requirements	Condition / Schedule
Environmental management system (EMS) and schedule of objectives and targets in line with BAT 1	Condition 2
Inventory of water, energy and raw materials consumption as well as waste water streams (BAT 2)	Condition 2
Emissions to Water are monitored to a standard method and key parameters and being monitored (BAT 3,4)	Schedule B and C
Energy Efficiency and Resource Use (BAT 6, 10, 21)	Condition 2, 7 and Schedule C
Water consumption and waste water discharge (BAT 7, BAT 21 (table 9))	Schedule C , Condition 3, 6
Harmful Substances (BAT 8) and ozone depleting substances (BAT 9)	Condition 6
Prevented uncontrolled emissions to water (BAT 11)	Schedule B (tidal holding tank), condition 3 (high level alarms and condition 6 (bundling))
Waste water treatment plant techniques (BAT 12) and BAT-AELs	Schedule C (control and monitoring), Schedule B (Emissions)
Noise and Odour management plans (BAT 13, 14, 15)	Condition 2, 6
Waste (BAT 22)	Condition 8

The *European Union (Medium Combustion Plants) Regulations 2017 (SI 95/2017)* apply to the onsite boilers (with a thermal input $\geq 1\text{MW}$) (refer to section 7 below) . I consider that the applicable BAT Conclusion requirements are addressed through: (i) the technologies and techniques as described in the application; (ii) the standard conditions specified in the Recommended Determination (RD); and (iii) where applicable, the inclusion of additional specific conditions.

5. Planning Permission, EIS and EIA Requirements

5.1 EIA Screening

In accordance with Section 83(2A) of the EPA Act 1992 as amended, the Agency must ensure that before a licence or revised licence is granted, that the application is made subject to an environmental impact assessment (EIA), where the activity meets the criteria outlined in Section 83(2A)(b) and 83(2A)(c). In accordance with the EIA screening determination, the Agency has determined that the activity is likely to have a significant effect on the environment, and accordingly is carrying out an assessment for the purposes of EIA.

The activity exceeds the following threshold in Schedule 5 of the planning and Development Regulations 2001 as amended:

Installations for manufacture of dairy products, where the processing capacity would exceed 50 million gallons of milk equivalent per annum.

5.2 Planning Status

A number of planning applications have been made by Dairygold for the area within the existing installation boundary since 1996. Details of these planning applications and permissions have been provided in the application form.

Cork County Council granted permission for the most recent proposed development (planning ref 16/7031) on the 04 August 2017 subject to 32 conditions. The planning permission of relevance to the licence application included: *'construction of a new cheese production facility and a significant upgrade of the existing Dairygold Food Ingredients facility, upgrade and expansion of the existing wastewater treatment plant, installation of an underground pipeline to convey treated water from the facility to a discharge point at an existing outfall at Rathcoursey West, Midleton, 10.6 kilometres to the south west of the facility'*. This expansion will result in an increase in milk processing from 120,000 t/yr. to 365,411 t/yr. producing up to 37,500 t/yr. of cheese by 2025. An EIS (dated November 2016) was submitted to Cork County Council on 08 December 2016, in support of the above planning application, which is the subject of this licence application.

There were three third party appeals to An Bord Pleanála (PL04.249108) against the decision made by Cork County Council, mainly relating to the impact of the proposed wastewater discharge on Cork Harbour. Following requests for further information from An Bord Pleanála, Dairygold/TINE submitted additional information on the 30 May 2017 in support of the EIS. This information generally related to flood risk, traffic, wastewater treatment and disposal, sludge, overshadowing, lighting, stormwater and appropriate assessment. An Bord Pleanála granted permission for the proposed development with revised conditions on the 24 April 2018.

On the 15 February 2019, the applicant submitted to the Agency the most recent EIS (which relates to planning ref 16/7031) in support of this licence application.

5.3 Content of EIS and licence application

I have considered and examined the content of the licence application, the EIS and other relevant material submitted with it. Further information was sought under Regulation 10 from Dairygold/TINE on the following issues:

1. Emissions to Sewer;
2. Coastal Modelling;

3. Appropriate Assessment;
4. Baseline Report;
5. BAT Conclusions;
6. Nutrient Management Plan;
7. Storm Waters;
8. Air emissions (Odour control system).

On receipt of further information from Dairygold/TINE, all the documentation received was examined and I consider that the EIS complies with the requirements of the *EPA (Industrial Emissions)(Licensing) Regulations 2013*, when considered in conjunction with the additional material submitted with the application and supplemented by my assessment as contained in this report.

5.4 Environmental Impact Assessment Directive

Having specific regard to EIA, this inspector's report as a whole is intended to identify, describe and assess for the Agency the likely significant direct and indirect effects of the proposed activity on the environment, as respects the matters that come within the functions of the Agency, for each of the following environmental factors: human beings, flora and fauna, water, soil, air & climate, landscape, material assets and cultural heritage.

This inspector's report addresses the interaction between those effects and the related development forming part of the wider project. The cumulative effects, with other developments in the vicinity of the activity have also been considered, as regards the combined effects of emissions. The main mitigation measures proposed to address the range of predicted significant effects arising from the activity have been outlined. This inspector's report proposes conclusions to the Agency in relation to such effects.

In preparing this inspector's report I have considered and examined:

- the existing licence for Dairygold, Register Number: P0817-01;
- the licence application, Register Number: P1103-01 and the supporting documentation received from the applicant;
- the EIS;
- the submissions received;
- the documents associated with the assessments carried out by Cork County Council and An Bord Pleanála, and the issues that interact with the matters that were considered by those authorities and which relate to the activity.

5.5 Consultation with Competent Authorities

Consultation was carried out between Cork County Council, An Bord Pleanála and the Agency under the relevant section of the EPA Act, as amended. Cork County Council did not provide any observations to the Agency on the licence application and EIS but noted that all details, including EIA documents are available to view on the Cork County Council website. An Bord Pleanála had no observation to make in relation to the licence application and EIS.

6. Submissions

Forty nine valid submissions were made on this licence application. The main issues raised in the submissions received are summarised below, with the majority relating to concern over impact of the proposed new discharge on Cork Harbour. While the main points are summarised under issues raised (refer to table below), the original submission should be referred to at all times for greater detail and expansion of

particular points. The issues raised are noted and addressed in this report and were taken into consideration during the preparation of the recommended determination (RD).

	Submissions
Issue 1	<p>Concern over the impact the wastewater discharge from the installation will have on the water quality of the North Channel of Great Island in Cork Harbour, in particular the impact of fats, oils and grease, excess nutrients, suspended solids and chemicals on the status of this waterbody. Further issues raised relate to appropriate assessment and the effect of this wastewater on European Sites. Concern is also raised over the lack of control and continuous monitoring by the EPA of the wastewater before it leaves the installation.</p> <p><u>Response:</u> The upgraded WWTP techniques at the installation represent BAT for the Dairy sector. Condition 6.1 of the RD requires a test programme for the upgraded WWTP. There are strict ELVs proposed in the RD for the discharge of treated effluent from the installation, to protect the North Channel transitional waterbody. The limits are in line with the guidance specified in the national BAT note for the Dairy sector, the BAT-AELs specified in the FDM BATC and all limits are considered compliant with the requirements of the <i>European Communities Environmental Objectives (Surface Waters) Regulations S.I No. 272/2009, as amended</i>. The RD requires continuous monitoring for flow, total oxidised nitrogen, temperature, pH and ammonia at the inlet to the tidal holding tank (emission point ref no: SEM1). If the meters / probes register an ELV exceedance, an alarm activates, and staff are immediately notified. Condition 9.3 of the RD specifies actions to be taken should an incident occur.</p> <p>Treated effluent from this installation, in addition to emissions from Irish Distillers (P0442-02) and Midleton WWTP (D0056-01) combine in an Irish Water pipeline before discharging to the North Channel. These discharges are limited under waste water discharge licence (WWDL) register no D0056-01, held by Irish Water. Irish Water, under Section 99E of the EPA Act, as amended, gave its consent for this discharge, specifying ELVs and certain other conditions and restricted periods of emission. Where a discharge is to sewer, it can be taken that, as the waste water discharge has been subject to authorisation by the Agency, the relevant environmental quality standards have been met through the ELVs and conditions associated with that authorisation. In addition, the WWDL has regard to the water quality standards and objectives for the receiving water and protected areas (including shellfish). It is the responsibility of Irish Water to ensure that the combined discharge meets the limits and satisfies the conditions set in the WWDL. Compliance is subject to enforcement by the Agency's Office of Environmental Enforcement. This is further detailed, along with my assessment, in Section 8 (Discharges to Water and Ground) of this report.</p> <p>Both the Planning Authority and An Bord Pleanála considered the Natura Impact Statement (NIS) as part of the planning application and were satisfied that the proposed development would not have an adverse</p>

	<p>effect on the integrity of the European Sites, would not exceed statutorily established environmental quality standards and that a Stage 3 appropriate assessment was not required. Refer to Section 16 of this report. Treated effluent will be discharged just south of an SPA and SAC via an existing diffuser at Rathcoursey. The RD requires a restriction on the period of emission from the installation (detailed under Section 8).</p> <p>It is noted in the An Bord Pleanála's (ABP) inspectors report that the most critical issue in restoring good status to this receiving waterbody is the delivery of the Lower Harbour Sewage Scheme, whereby a new WWTP located at Shanbally will negate the discharge of untreated wastewater from Cobh, Carrigaline, Passage West/Monkstown and Ringaskiddy. According to the ABP Inspector, this will greatly benefit the Great Island Channel.</p>
<p>Issue 2</p>	<p>Concern was raised over the impact this proposed discharge will have on oyster beds in the North Channel. Further issues raised in relation to this concern relate to hydrodynamic modelling, phytoplankton growth, trophic status of the North Channel, Midleton WWTP, the lack of alternative discharge locations considered, coastal dispersion modelling, discharge restrictions, and the lack of dilution and controls to meet the discharge requirements. It is suggested that the discharge will not be taken out to sea but will instead circulate within the upper/inner reaches of the Great Island Channel. Concern over the wellbeing of fish stocks in the North Channel and also a potential end to charitable swims and other amenity clubs in the area.</p> <p><u>Response:</u> Irish Water engaged the services of Irish Hydrodata to carry out an assessment of the Rathcoursey outfall and impacts of the treated effluent arising from the Dairygold/TINE installation. The assessment was submitted in support of the licence application and concluded that the discharge will not impact the water quality of Cork Harbour. The onsite WWTP has UV treatment and a faecal coliform limit of 250fc/100mls for treated effluent specified by Irish Water. All sanitary effluent from the installation will be treated at the Mogeely WWTP (A0558-01) and therefore the discharge should not contain any faecal contaminants. The final combined effluent discharge at Rathcoursey is regulated by an WWDL (D0056-01) granted by the EPA to Irish Water. Under this authorisation, any discharges from the agglomeration served by the waste water works will not contravene any of the requirements of Regulation 6 of the Waste Water Discharge (Authorisation) Regulations, 2007, which includes the requirement to prevent pollution of waters.</p> <p>In addition to the ELVs, IW also specified operational controls on the period of emission from the installation, in line with Midleton (D0056-01). The Section 99E consent stated: <i>A discharge shall only occur during an ebb tide and shall cease discharging a minimum of thirty minutes (30 mins) prior to a flow tide.</i> Following consultation with the Agency's Office of Evidence & Assessment, the RD proposes the following revised wording: <i>Treated trade effluent shall discharge via Rathcoursey outfall 90 minutes after high tide in Cobh and shall stop discharging from the Rathcoursey outfall 60 minutes prior to low tide time marked for Cobh.</i></p>

	<p>This will ensure the discharge will be flushed out of the channel. This is discussed further under section 8 of the report.</p> <p>Alternative discharge locations were considered under Chapter 3 (consideration of alternatives) of the EIS, submitted. This is discussed under section 15 of the report.</p>
Issue 3	<p>Concern over the increase in the volume of storm water to be discharged to the River Kilta and lack of storm water attenuation proposed to prevent 'washout of Kilta ecosystem'.</p> <p><i>Response:</i> At present Dairygold under licence reg no P0817-01, discharges 700m³/day of treated effluent to the River Kilta. This discharge shall cease from date of grant of licence. Dairygold/TINE will not be permitted to discharge treated (or untreated) effluent to the River Kilta. The RD requires continuous monitoring of pH, conductivity, temperature and daily visual inspections at all storm water emission points, SW4 & SW5. The RD requires periodic monitoring for other relevant parameters. Abatement consists of class I full retention separators and there is a divert valve to the onsite WWTP on all the monitoring chambers, in the event of a trigger level exceedance. Storm water emission point ref no SW5 is connected to a storm water attenuation tank, thereby facilitating restrictive run off. The EMS will also include an evaluation of practicable options for reduction in water consumption. The RD requires that all storm waters exceeding trigger levels will be diverted for retention and suitable disposal. The RD also requires action to be taken in the event of an incident.</p>
Issue 4	<p>Concern is expressed at the applicant's unwillingness and lack of effort to engage with local communities about this development, in particular around the Rathcoursey area. Concern is also expressed about Dairygold's corporate history, as they have been prosecuted in the past.</p> <p><i>Response:</i> Matters relating to planning permission and consultation with local communities are within the remit of the planning authority and An Bord Pleanála only and are outside the remit of the Agency. However, the RD does require the applicant to establish, maintain and implement a Public Awareness and Communications Programme to ensure that members of the public can obtain information at the installation, at all reasonable times, concerning the environmental performance of the installation. Furthermore, applicants must publish/advertise notice of intention to make the licence application locally. A submission relating to the application may be made to the Agency from any member of the public detailing comments or observations on the application, which are taken in to consideration during preparation of the RD.</p> <p>The Office of Environmental Enforcement (OEE) is responsible for the enforcement of EPA licences issued to industry and is committed to taking action against those who flout the law. Where significant breaches of environmental legislation occur the OEE will prosecute. In the event of an incident that relates to discharges to sewer, the applicant must notify Irish Water and the Local Authority as soon as possible, take corrective action, minimise effect on the environment and avoid recurrence.</p>

	The EPA Act 1992, as amended requires that the Agency must be satisfied that Dairygold/TINE is a 'fit and proper' person to hold a licence and specifies the criteria which must be taken in to account. Dairygold Co-operative Society Limited, has been prosecuted and convicted, for offences at other sites, namely the Mitchelstown site (Reg. No. P0404-02) in 2004. However, it is considered that having regard to the provisions of section 84(5) of the EPA Act and the conditions of the RD, that Dairygold/TINE can be deemed fit and proper person for the purposes of this application for a licence (refer to section 17 of this report).
Issue 5	<p>The HSE did not have any specific observations to make with respect to the application but do list some recommendations within the context of site operations which relate to incidents, evacuations of site, plan for severe weather and impact on sensitive areas in the event of an incident.</p> <p><i>Response:</i> Monitoring, abatement and ELVs stipulated in the RD will ensure the emissions from the site will not negatively impact on the environment and will ensure the protection of human health. It is considered that if the activity is carried out in accordance with the RD, along with mitigation measures proposed, the operation of the activity will not cause environmental pollution and will ensure the protection of human health. Condition 9.3 of the RD lists actions to be taken in the event of an incident. Condition 9 also requires the applicant to ensure a documented emergency response programme is in place within six months from date of grant of licence.</p>

7. Emissions to Air

This section addresses the following:

- channelled emissions to air
- climate impact
- odour

7.1 Channelled Emissions to Air

The main emissions to air from the installation arise from the onsite boilers, as detailed below. There are two operational hot water boilers (boiler 1 and boiler 2), with one currently used as a back-up. Process hot water for the TINE plant will be supplied by a new boiler (emission point ref no: A1-3). Table 2 below gives details on all main channelled emissions at the installation and the processes which gives rise to each emission.

Table 2. Table of main channelled emission points

Emission Ref No	Process description	ELVs proposed
A1-1 (6.5MW) - existing	Boiler No. 1 (natural gas) – used as a back-up only.	NOx 200mg/m ³ , volumetric flow 9,000m ³ /hr.
A1-2 (7.5MW) – proposed	Boiler No. 2 (natural gas)	NOx 200mg/m ³ , volumetric flow 9,000m ³ /hr.

A1-3 (1MW)-proposed	TINE Boiler (natural gas), equipped with a low NOx burner	NOx 100mg/m ³ , volumetric flow 1,345 m ³ /hr.
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Assessment and mitigation

As part of the application, air dispersion modelling was carried out to predict the ambient pollutant concentrations resulting from all main emissions. The modelling used was in accordance with published Agency guidance and was considered sufficiently detailed and conservative to adequately assess the impact of the main emissions to air.

The ADMS5 (atmospheric dispersion modelling system) version 5.2, November 2016 dispersion model, was used to predict ground level concentrations of NO₂ assuming all boilers are in operation all the time. The input parameters included design details for all main emission points onsite, ELVs proposed in the table above, meteorological data from Cork Airport (2014 – 2017) and building wake effects. The emission values for the model are compliant with the Medium Combustion Plants Regulations, S.I No. 595 of 2017 (MCP Regs). There is no ambient air monitoring available near Mogeely. According to the applicant, Mogeely is a Zone D (small town/rural) air quality zone classification¹.

As part of this assessment regard was had to the EPA’s Air Dispersion Modelling from Industrial Installations Guidance Note (AG4) which requires that the process contribution (PC) from industrial installations is added to the background concentration (BC) to obtain the predicted environmental concentration (PEC). To assess the impact, each PEC is compared with an appropriate environmental assessment level (EAL). In this case the appropriate EALs are the relevant air quality standards taken from the Air Quality Standards Regulations, 2011.

Table 3. Impact of air emissions with three natural gas boilers

Parameter	Average Period	Back. conc. ^{Note 1} (µg/m ³)	PC ^{Note 2} (µg/m ³)	PEC ^{Note 2} (µg/m ³)	PEC as % of AQS	AQS (µg/m ³) ^{Note 3}
Nitrogen Oxides (as NO ₂)	99.8%ile hourly	30	23	53	26.5%	200
	Annual	3	6	9	22.5%	40

Note 1: Hourly max and annual mean NO₂ concentrations (2014) EPA document 'Air Quality in Ireland 2014, Key indicators of Ambient Air Quality'.

Note 2: Predicted Environmental Concentration (PEC) = process contribution (PC) + background concentration.

Note 3: Air Quality Standards (AQS) Regulations , SI 58/2009 and 180/2011, unless otherwise stated.

¹ Air Quality Zone realignment January 2013 (Definitions of Irelands four air quality management zones)

Discussion of Modelling Results

Nitrogen Oxides (as NO₂)

As can be seen from table above the predicted environmental concentrations do not exceed the relevant air quality standard. The concentration contour pattern indicates that the highest predicted hourly levels occur near the north west boundary of the site. At the nearest sensitive receptor (residential), the maximum predicted hourly NO₂ level is 19 µg/m³, which is 9.5% of the AQS. At the houses near the south east boundary of the installation, the hourly NO₂ concentrations are similar, ranging from 17-18 µg/m³ (9% of the AQS). The results demonstrate that the predicted short term and annual concentrations of NO₂ are well below the AQS for the protection of human health and the environment. Emission limit values, therefore, have been set with regard to these emission rates modelled by the applicant.

In addition, the RD specifies emission limit values, monitoring requirements and other licence conditions, which will ensure the emissions to air will not negatively impact on air quality and will minimise the potential risk to human beings, flora and fauna. Considering the conservative assumptions in modelling and requirements in the RD, it is unlikely that air emissions from the installation will have a significant impact on the environment. At the emission limit values specified in the RD, the predicted ambient concentrations do not exceed air quality standards.

Accidental air emissions could occur if the boilers were to malfunction. However, the likelihood of accidental emissions is considered low in light of the measures outlined in the 'Prevention of Accidents' section below.

7.2 Climate Impact

Climate change is a significant global issue which affects weather and environmental conditions (air, water and soil) which consequently affects population and human health, material assets and cultural heritage and biodiversity. Climate change is caused by warming of the climate system by enhanced levels of atmospheric greenhouse gases (GHG) due to human activities.

Assessment and mitigation

The source of GHG emissions from the installation is the combustion of natural gas in the boilers which are used for heating purposes. All boilers onsite fall within the scope of the *European Union (Medium Combustion Plants) Regulations S.I. No. 595 of 2017*, as the boilers are ≥1MW thermal capacity. The installation does not require a GHG permit from the Agency as the onsite boilers (3 in total) combined thermal input capacity is below 20MW.

To reduce the climate impact of the installation, the RD requires an energy efficiency plan, use of cleaner technology and reduction in effluent generation to be addressed as part of the Environmental Management System. The RD also requires an audit of the energy efficiency of the site within one year of the date of grant of this licence and an energy efficiency plan incorporating techniques specified in the FDM BATC.

The likelihood of accidental GHG emissions occurring, which could affect climate is low, in light of the measures outlined in the 'Prevention of Accidents' section below and the proposed conditions in the RD.

7.3 Odour

The installation is located in the village of Mogeely. There are residential dwellings and a housing estate in the immediate vicinity of the site.

The main source of potential odour from the installation is from the WWTP which has been upgraded and a sludge dewatering plant. There is one Odour Control Unit (OCU) in place to treat odorous air from the WWTP, which was installed as part of the upgrade. The OCU serves the foul air extracted from the balance tanks, inlet works, DAF sludge storage tanks, DAF 1 & 2 and the sludge thickening room.

Assessment and Mitigation

There were five complaints in 2018 under the current Dairygold licence (P0817-01) received by the Agency in relation to odour from the installation, one of the possible likely causes was identified by the Agency as the WWTP.

The air extracted from these various plant components (listed above) will be piped to an activated carbon filter unit (the OCU mentioned above). The unit operates at an odour removal efficiency of >98% for the removal of hydrogen sulphide, ammonia and organo-sulphur compounds and is designed to treat odour to a concentration of <700 OuE/m³. It is an activated carbon filter unit that comprises of a fan and vessel to hold the carbon bed.

The application states that this emission is then vented to air via emission point ref no: A3-43 (referred to as OCU 1 in the RD). This emission has been classified as a minor emission by the applicant. The applicant states that *the installation of the odour control unit is an additional precautionary measure to further minimise potential malodorous emissions*. The applicant submitted an odour impact assessment as part of the application entitled *Odour impact assessment of new waste water treatment plant located in Dairygold Co-operative Society Ltd, Mogeely, Co. Cork (dated 01 July 2019)*.

Odour associated with the operation of the upgraded WWTP is not expected to be a significant issue. The upgrade works include the demolition of the bio-tower which was a source of odour in the past. All other tanks (balance tank, sludge tank) will be covered and directed to abatement.

Odour management systems currently in place at the installation include:

- Balance tank is fully enclosed and negatively extracted to odour control system;
- DAF tanks are fully enclosed and extracted to the odour control system;
- Sludge thickening is carried out in sealed building and extracted to the odour control system;
- Picket fence thickener enclosed and fitted with a passive filter;
- Carbon filtration odour control unit operates at an odour removal efficiency of >98% (<700 OuE/m³).

The applicant used the AERMOD prime (18218) model to assess the potential impact of odorous emissions on sensitive receptors. The model included an exhaust flow of 3,563m³/hr and an average odour concentration of 242 OuE/m³ obtained from one data set obtained on the 12 June 2019. The Agency's Odours Emissions Guidance Note (Air Guidance Note AG9) (2019) refers to the U.K. Environment Agency Guidance which recommends an odour standard of 1.5 OU_E/m³ as a 98%ile of hourly averages at the

worst-case sensitive receptor ². The odour assessment shows that based on the future operation of the upgraded WWTP, odours will not be detected beyond the site boundary. The predicted concentrations are below the UK Environment Agency standard of 1.5 OU_E/m³.

While the applicant classified the emission as minor, considering the application of abatement and the close proximity to sensitive receptors, the following conditions and limits are set in the RD:

- Limits, monitoring and control requirements are set in the RD for the emission point ref no: OCU 1, based on EPA guidance (AG5), BAT for the Dairy sector and modelling results.
- Condition 5 requires that no emissions, including odours, shall result in impairment beyond the installation boundary.
- Condition 2 of the RD requires the applicant to implement odour management under the Environmental Management System (EMS) in accordance with BAT 15 of the FDM BATC.

Accidental odour emissions could occur if the abatement system fails and/or the wastewater treatment plant malfunctioned, causing a potential odour impact. However, the likelihood of accidental odour emissions occurring is considered low in light of the measures outlined in the 'Prevention of Accidents' section of this report and in light of the proposed conditions in the RD.

7.4 EIA on emissions to air

For the purposes of EIA, the environmental factors potentially affected by main emissions to air, odour and GHG emissions from the activity include: human beings, climate, air quality, flora and fauna.

Direct and indirect effects

Direct effects are assessed above and indicates that air, odour and GHG emissions from the installation under normal operation are not likely to cause a significant direct effect, once the requirements of the RD are met and in light of the measures outlined below in the 'Prevention of Accidents' section. The RD specifies limits to comply with the MCP Regs. It specifies measures to ensure that energy is used efficiency in line with FDM BATC and measures to prevent nuisance occurring. It is therefore considered that no significant direct or indirect effects are likely as a result of air emissions from the activity.

Cumulative effects

Any combustion process will inevitably produce quantities of GHG gases. Modelling of the operation of the three boilers combined has determined that emissions will not significantly affect local air quality. The Mogeely agglomeration is serviced by the Mogeely WWTP (A0558-01) and is located parallel to the Dairygold/TINE WWTP, which has the potential to give rise to odours. There is no history of odour complaints at Mogeely WWTP and odour is not expected to be an issue at the installation following upgrade of the WWTP. There are no other installations or activities in the vicinity which

² Definition: 1ouE/m³ is the detection threshold of 50% of a qualified panel of observers working in an odour free laboratory using odour free air as zero reference.

are likely to give rise to significant cumulative effects from odour beyond the site boundary.

I am satisfied that there will not be significant effects on air quality, climate, human beings, flora and fauna or any other aspect of the environment from air emissions arising from the operation of the activity.

8. Discharges to Water and Ground

This section addresses the following:

- Storm water discharges to waters
- Emissions to Sewer
- Emissions to ground/groundwater

8.1 Discharges to Waters

8.1.1 Emissions to Waters

There are no process emissions to waters at the installation.

8.1.2 Storm water discharges to waters

There is an existing storm water drainage system at Dairygold being monitored for pH, conductivity, COD and temperature before discharge via SW4 into the adjacent River Womanagh/Kilta. There is an oil interceptor and monitoring chamber with a divert valve to the onsite WWTP on this discharge point.

The storm water drainage system has been revised as part of the upgrade and expansion of the site. The new system will have three storm water networks, which include:

- Catchment 1(a) (milk intake/yard area, HGV turning areas, weighbridge units, car parking areas),
- Catchment 1(b) (new TINE site),
- Catchment 2 (existing Dairygold site).

The storm water from catchment 1(a) and 1(b) will be connected to a storm water attenuation tank, thereby facilitating restricted run-off, before discharging into the River Womanagh/Kiltha via a flow regulating valve. The storm water monitoring chamber will analyse continuously for pH, conductivity and temperature and all non-compliant storm water will be diverted to the WWTP for further treatment. Also prior to discharge, there is a sampling point from which grab samples can be taken at any time.

Catchment 2 is an existing storm drainage network and all storm water run-off discharges through a monitoring chamber with a valve to divert all non-compliant storm water into the process sewer system for treatment at the WWTP.

Table 4 below gives details on installation's storm water discharges to waters; the type of on-site abatement (if any), as well as details of the receiving water.

Stormwater discharge point details			
Discharge Point Code	Monitoring Point Code ^{Note 1}	Monitored parameters (monitoring frequency)	Trigger levels established (Y/N)
<i>SW4 (catchment 2)</i>	<i>SW4-MP (grab samples can be taken here)</i> <i>SW-CMP1 (continuous monitoring/divert chamber)</i>	<i>pH (continuous), Temperature (continuous), Conductivity (continuous), COD (weekly), Visual inspection (daily), Total Ammonia (monthly), Orthophosphate (monthly) and suspended solids (monthly)</i>	<i>Yes, and required by RD</i>
<i>SW5 (catchment 1a and 1b)</i>	<i>SW5-MP (grab)</i> <i>SW-CMP2 (continuous monitoring/divert chamber)</i> <i>SW-CMP3 (continuous monitoring/divert chamber)</i>	<i>pH (continuous), Temperature (continuous), Conductivity (continuous), COD (weekly), Visual inspection (daily), Total Ammonia (monthly), Orthophosphate (monthly) and suspended solids (monthly)</i>	<i>Yes, and required by RD</i>
Drainage areas:		<i>Buildings, site roads and walkways, car parks.</i>	
Abatement:		<i>Class I full retention separator (located upstream of all monitoring chambers)</i>	
Receiving water:		<p><i>The installation is located on the east bank of the Upper River Womanagh/Kilta (IE_SW_19W011000). This river flows in a southerly direction for approximately 3km before joining the Womanagh River (IE_SW_19W011300) west of the village of Ladysbridge. The Womanagh River flows into the Womanagh Estuary (IE_SW_030_0100) approximately 9km downstream of Mogeely Village. The overall status for the River Womanagh/Kilta is moderate (2010-2015) and it is at risk of not achieving good status. There are national monitoring stations on the River Womanagh/Kilta:</i></p> <p><i><u>Upstream (900m): station (RS19W0100700), good status Q4 (2017)</u></i></p> <p><i><u>Downstream (1.4km): station (RS19W011000)-moderate status Q3-4 (2017)</u></i></p>	
Automatic diversion in place:		<i>Yes, all monitoring chambers have an automatic divert system controlled by pH, conductivity and temperature.</i>	

Note 1: All monitoring and sampling locations on the storm water drainage network are on drawings No. 14 and 14A in the application form.

The implementation and enforcement of the IE licence and operation of the EMS will ensure management of the storm water runoff within the installation boundary.

- The RD requires that the storm water discharge is visually inspected daily, continuously monitored for pH, conductivity and temperature in accordance with *Schedule C.2.3 Monitoring of Storm Water Emissions* and specifies that only uncontaminated storm water may be discharged to surface water;
- In the event of trigger level exceedance, all storm water is diverted to the onsite WWTP for further treatment;
- The RD contains standard conditions in relation to the storage and management of materials and wastes;
- The RD also requires that accident and emergency response procedures are put in place to control any impacts which could occur should any mitigation measures fail;
- The RD requires that all integrity testing of bunds, tanks, containers and pipework (including stormwater drainage systems) is carried out every three years;
- The RD requires the applicant to maintain class I full retention separators on all storm water emission points;
- The RD requires the applicant to review and update the risk assessment on firewater retention as required by the Agency. The combined inlet balance/firewater retention tank will be managed such that a volume of 994m³ is always maintained to ensure appropriate retention;
- There is a non-return valve on the storm water outfall pipes to prevent flooding of the interceptors in the event of a high-water level in the river;
- All pumps sumps, storage tanks or other treatment plant chambers from spillage might occur will be fitted with high liquid level alarms within six months from date of grant of licence.

The likelihood of accidental emissions to storm water is considered low in light of the measures outlined under the 'Prevention of Accidents' section below and the proposed conditions in the RD. It is therefore considered that direct effects as a result of storm water emissions are considered to be neither likely nor significant.

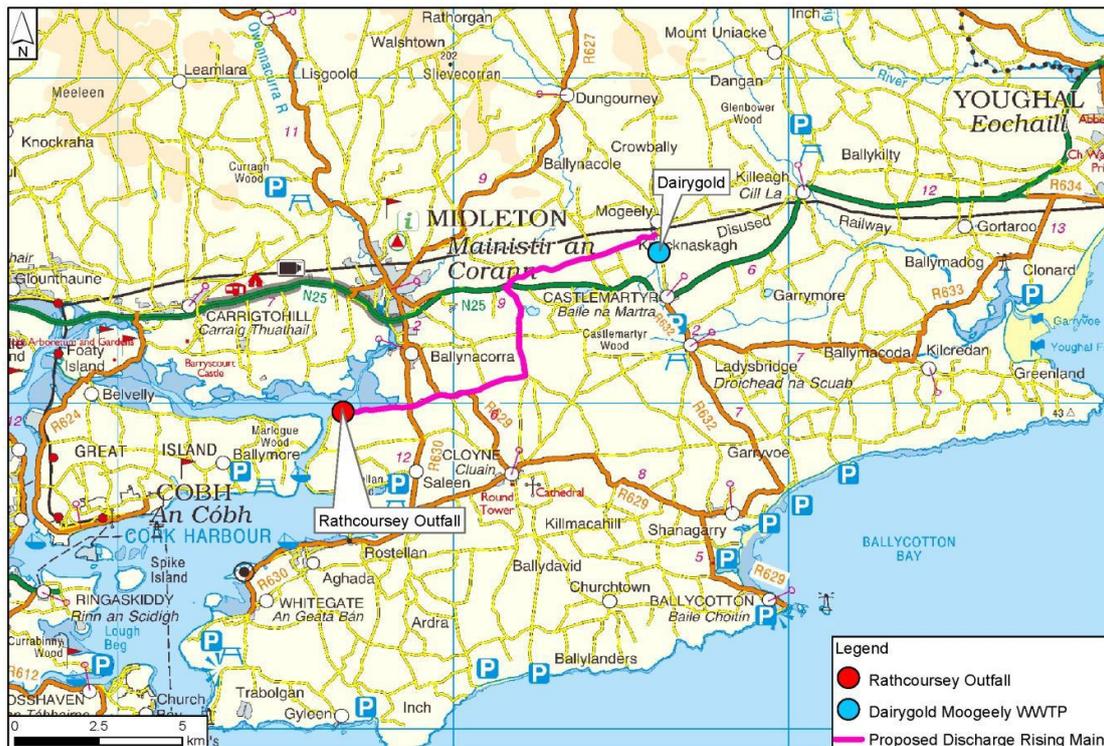
8.2 Emissions to Sewer

8.2.1 Process emissions to sewer

At present Dairygold holds an EPA Industrial Emissions licence, Reg No P0817-01, permitting the installation to discharge 700m³/day via a wastewater treatment plant (WWTP) to the River Womanagh/Kilta. Current effluent treatment consists of balancing, pH correction, fat removal, biofiltration, activated sludge, final clarification, sand filters and sludge thickening. The trade effluent is mainly generated during cleaning operations (tank, truck and storage tank washing, pipeline washing and sanitizing) and during the manufacturing process at the main production site. It contains residues of milk solids, detergents, sanitizers and milk wastes.

To cater for expansion and additional volumes of wastewater, Dairygold/TINE propose to cease discharge to the River Womanagh/Kilta and discharge 4,000m³/day of treated effluent to an Irish Water pipeline which runs for approximately 14km prior to discharging to the North Channel of Great Island in Cork Harbour via a tidal holding tank at Rathcoursey.

The Dairygold/TINE connection to the Irish Water sewer pipeline comes from a rising main at the onsite WWTP, crosses the River Womanagh/Kilta and a new isolation valve chamber is on the L3627 road to Midleton, 10m north of the installation boundary, referred to as SE1. This pipe then travels ~10.9km before tie-in to the Midleton Main Drainage network at the East Ferry road adjacent to Bawnard crossroads (Grid No:188260E 069906N). The final ~3km is effectively a gravity discharge in an existing IW sewer pipe to a tidal holding tank at Rathcoursey. The map below gives a visual of the public road along which the pipeline has been installed.



As part of the expansion, the onsite WWTP has been expanded and upgraded. It will initially cater for a wastewater stream of 2,700m³/day with provision to expand to 4,000m³/day in the future. During low production (December to February) outflow from the WWTP is expected to be in the region of 674m³/day.

Trade effluent will be pumped from the inlet to the balance tank, which has a volume of 850m³ for effluent and a dedicated 1,000m³ reserved for firewater retention. Two new dissolved air flotation (DAF) tanks, each designed to take 64m³/hr include a flocculation system for fats, oils and solids removal. The new biological treatment system will include an anaerobic, anoxic, three stage aerobic zones and aeration tanks for biological nutrients and BOD removal. Two clarification tanks take flow from aeration tanks before being directed to UV treatment for effluent disinfection. The upgrade also included the demolition of the existing biotower, which was a source of odour issues in the past. All sanitary effluent (an average volume of 9.4m³/day) will be directed to the public foul sewer for treatment at Mogeely WWTP (A0558-01), which currently has a population equivalent (p.e) of 299 and a design capacity of 1,200p.e. Sludge from both clarifiers will be pumped to a Picket Fence Thickener (PFT) tank and allowed to settle. The DAF sludge will be combined with the PFT sludge and then dewatered using a decanter centrifuge, pumped to a sealed skip prior to removal off site. This is addressed further under Section 10 (Waste) of this report.

Treated effluent from the UV treatment flows into an onsite tidal holding tank, which has the capacity to provide ~1194m³ of storage, before restricted discharge to the North Channel via an IW pipeline (discussed further under heading *BAT-AELs and Control of Emissions to Water* below). There is online continuous monitoring at the inlet to the tidal holding tank for flow, total oxidised nitrogen (TON) and ammonia. This will alarm if out of specification influent conditions are detected. The upgraded waste water treatment techniques represent BAT for the sector.

Assessment and Mitigation Receiving Water

Analysis of the North Channel transitional (estuary) waterbody (IE_SW_060_0300) indicates that during the 2015-2017 period, the waterbody is of intermediate status under the trophic status assessment scheme³ due to a high dissolved oxygen (DO) concentration measured in the system. The high DO would suggest large amounts of phytoplankton which produce oxygen during photosynthesis. Phosphorus is generally considered the limiting nutrient in estuaries while nitrogen is considered primary in coastal ecosystems. The limiting nutrient is the nutrient that is naturally in short supply under normal conditions. The *European Communities Environmental Objectives (Surface Waters) Regulations 2009 (S.I No. 272 of 2009), as amended* (EO Regs) specifies a median standard for Molybdate Reactive Phosphorus (MRP) in transitional waters (≤ 0.060 mg P/l @ $> 0-17$ psu or $\leq 0.060 - 0.040$ mgP/l @ $> 17-35$ psu). The MRP is well below this standard in winter and summer. The 'East Ferry Quay Rathcoursey West' water monitoring station (LE550) is the station closest to the outfall in the channel (approximately 900m south) and has a median concentration of 2.5µg/l (0.0025mg/l) for MRP, therefore does not breach the environmental quality standard (EQS) specified in the EO Regs. The North Channel is of 'moderate' Water Framework Directive (WFD) status for chemical elements based on EPA 2015 – 2017 monitoring data (previously 'good' status 2010-2015), thereby indicating an overall deterioration in water quality. It does not have a risk classification (under review).

The Owenacurra estuary (IE_SW_060_0400) flows into the North Channel and is classified as 'potentially eutrophic' and according to the Agency's Office of Evidence & Assessment (OEA), has been subject to large blooms of phytoplankton in recent times (2017-2018). This waterbody is one of four waterbodies in the country with the highest dissolved inorganic nitrogen (DIN) concentrations, thereby indicating the presence of increased nitrogen levels from human pollution sources.

Cork Harbour (IE_SE_060_0000) is approximately 2.2km south of the Rathcoursey outfall and is of 'moderate' WFD status (previously 'good' status 2010-2015). The coastal waterbody is of intermediate trophic status (2015-2017 data), this was previously unpolluted in 2010-2012. This is again due to high oxygen levels. It is noted that part of the North Channel was designated as shellfish waters in 2009⁴ approximately 1km from the outfall at Rathcoursey. Rostellan (North, South and West) shellfish waters are also located approximately 3km from the outfall at Rathcoursey.

³ Water Quality in 2017 An Indicators Report (EPA November 2018)

⁴ European Communities (Quality of Shellfish Waters) (Amendment) Regulations 2009 and European Communities (Quality of Shellfish Waters) Amendment (No. 2) Regulations 2009.

The implications of this discharge on Cork Harbour were investigated by Dairygold/TINE in a document entitled '*Rathcoursey Outfall Investigation of the Impact of Treated Wastewater Discharges arising from the Dairygold Mogeely Plant to Cork Harbour*' dated 11 July 2019, which was submitted in support of the licence application. This study was originally prepared as part of the planning application (ref 16/7031) and potential impacts on Cork Harbour were assessed using calculations and hydraulic modelling methods. The results of this study state that the neap tide volume upstream of the outfall is approximately 10,490,455m³ indicating adequate dilution available in the vicinity of the outfall. Furthermore, the addition of the Dairygold/TINE treated effluent (at proposed limits) will increase the median background PO₄ by <0.0002mg/l P indicating that the EQS for MRP will continue to be met. The EO Regs specifies DIN standards for coastal (Cork Harbour) but not for transitional (North Channel). The proposed BOD and suspended solids (SS) load from the installation are 100kg/day and 140kg/day respectively. Model results indicate that the loads will increase the 95%ile background BOD by less than 0.05mg/l (EQS of ≤4.0mg/l BOD for good status) and SS by a similar amount. There is no ecological standard for SS, so this parameter is not used in the determination of status of a waterbody.

BAT-AELs and Control of Emissions to Water

There is no further off-site treatment of the wastewater once it leaves the installation. The emission levels associated with BAT (BAT-AELs) for the installation are set out in the FDM BATC. Dairygold/TINE can meet the BAT-AELs and intend to comply with them from date of grant of licence (refer to table below).

Wastewater arising at the installation is treated in the onsite WWTP prior to discharge via emission point ref no SEM1 to a pipe under the control of Irish Water. In addition to wastewater emissions from this installation, wastewater from Irish Distillers (P0442-02) and Midleton WWTP (D0056-01) combine in this IW pipeline and are designed to discharge to the North Channel, on the ebbing tide via Rathcoursey outfall. These combined discharges are currently limited under waste water discharge licence (WWDL) register number D0056-01 held by IW. The maximum emission volumes from Dairygold/TINE will represent a 26% increase in the discharge volumes from the Rathcoursey outfall.

Irish Water reported in the 2017 annual environmental report (AER) for WWDL D0056-01 that the WWTP was non-compliant with the ELV set for faecal coliforms (95%ile, not the geometric mean) but state that based on EPA monitoring data, the discharge from the WWTP does not have an observable negative impact on the WFD status of the transitional water quality. The application states that Irish Water propose to commence additional sampling at the Rathcoursey tidal holding tank (capacity of 2012.5m³) with composite sampling equipment downstream of the Dairygold/TINE connection point to ensure samples taken represent the combined effluent to be discharged via the primary discharge point at the estuary (SW01 MIDL) and to ensure compliance with the limits specified under D0056-01. The licence (D0056-01) was issued in 2010 under the Waste Water Discharge (Authorisation) Regulations 2007 and the limits applied were based on the Urban Waste Water Treatment Regulations 2001.

Irish Water, under Section 99E of the EPA Act 1992 as amended, gave its consent for the discharges from Dairygold/TINE, specifying certain ELVs, as well as certain other conditions and monitoring requirements.

Where a discharge is to sewer, it can be taken that, as the wastewater discharge has been subject to authorisation by the Agency, the relevant EQS have been met through the ELVs and conditions associated with that authorisation. It is Irish Water's responsibility to ensure that it meets the limits and satisfies the conditions set in their wastewater discharge licence or certificate.

Table 5 below summarises BAT, the relevant ELVs as recommended by Irish Water, proposed by the applicant and this RD, along with BAT-AEL's for comparison purposes.

Parameter	Irish Water ELVs	Dairygold /TINE proposed ELVs	BAT	BAT-AELS ^{Note 1}	Limits in the RD
Volume (m ³ /day)	4,000	4,000	-	-	4,000
Temp °C	25	25	-	-	25
pH	6-9	6-9		-	6-9
Toxicity (TU)	5	-	5	-	5
	mg/l (kg/day)	mg/l	mg/l	mg/l	mg/l (kg/day)
Biological Oxygen Demand	25 (100)	25	20 – 40 (or >90% removal rate to influent load)	No BAT AEL but as an indication the yearly average will generally be ≤20mg/l	25 (100)
Chemical Oxygen Demand	125 (500)	125	125 – 250 (or >75% removal)	25 – 100 (an upper end range of 125 for dairies)	125
Suspended Solids	35 (140)	35	50	4 - 50	35
Fats oils and Grease (FOG)	15 (60)	15	10 - 15	-	10
Ammonia (as N)	10 (40)	10	10	-	10
TON (sum of nitrate + Nitrite)	15 (60)	15	-	-	15
Total Nitrogen (as N)	15 (60)	15	5 – 25 (or >80% removal)	2 - 20	15
Total Phosphorous	-	2	2 – 5 (or >80% removal)	0.2 – 2	2
Faecal Coliforms	≤250fc/100mls and 95%ile ≤1,000fc/100mls				≤250fc/100mls and 95%ile ≤1,000fc/100mls

Note 1: Commission Implementing Decision of 12 November 2019 establishing best available techniques (BAT) conclusions for the food, drink and milk industries, under Directive 2010/75/EU of the European Parliament and of the Council.

The ELVs specified in the RD are based on the following rationale:

- The limit specified for FOG in the S99E consent was 20mg/l but this has been reduced to 10mg/l in the RD in line with BAT. The WWTP has recently been upgraded to include a DAF unit, indicating this limit can be met.
- The Total Nitrogen is 15mg/l and it is noted that the WWTP has a greater than 80% removal in relation to influent load.
- The ELV set for faecal coliforms is the same as that set in the Midleton WWDL (D0056-01). The treatment at the Dairygold/TINE will include UV disinfection. It is noted that all sanitary effluent from the installation is going to the Mogeely WWTP.

In addition to the ELVs, IW also specified operational controls on the period of emission from the installation, in line with Midleton (D0056-01). The Section 99E consent stated: *A discharge shall only occur during an ebb tide and shall cease discharging a minimum of thirty minutes (30 mins) prior to a flow tide.* Following consultation with the Agency's OEA, the RD proposes the following wording: *Treated trade effluent shall discharge via Rathcoursey outfall 90 minutes after high tide in Cobh and shall stop discharging from the Rathcoursey outfall 60 minutes prior to low tide time marked for Cobh.* The revised wording is based on EPA monitoring⁵ results from East Ferry monitoring station (approximately 980m south of the outfall) and tidal information at Cobh (admiralty tide charts⁶). This is considered the most appropriate timing for emission of treated effluent as the discharge will avoid the slack tide and discharge after high tide (during ebbing), ensuring the discharge will be flushed out of the channel, away from European sites (refer to diagram below).

The period of emission will be controlled by lunar clock, which is a software that predicts the tides, at the onsite tidal holding tank. Based on the discharge restriction, the lunar controlled outlet valve will effectively be closed for half of each tide i.e. ~6.25 hours per 12.5-hour tide. The estimated travel time along the final gravity section of the pipeline (from the tie-in to the IW main down to the Rathcoursey tidal holding tank) is 60 minutes. According to the applicant, this shall be confirmed during the discharge pumps commissioning phase (condition 6.1 of the RD). All actual and trend information can be transferred to a central location and viewed by EPA inspectors as required. A log of all discharge times, dates and volumes will be retained onsite for inspection. ELVs, monitoring and restricted periods for discharge of the treated effluent will apply at the inlet to the tidal holding tanks (emission point ref no:SEM1) at the onsite WWTP. If the valve doesn't open or close as programmed, a text alert (alarm) is sent to the operators from the control system. All events are logged by Cork County Council/Irish Water at the Midleton WWTP. Dairygold/TINE have employed suitably qualified consultants to ensure that the Mogeely pumps are co-aligned with the outlet valve at Rathcoursey.

⁵ Continuous monitoring carried out by OEA during the month of November (2019) with a hydrolab attached to a minibuoy.

⁶ Admiralty Maritime Data Solutions, UK Hydrographic Office.

Location of the diffuser on the North Channel in relation to the European Sites.



Additional requirements by Irish Water

In addition to the ELVs and discharge restriction, IW also specified 10 additional requirements relating to the discharges to sewer. These requirements are provided for in the standard conditions of the RD or have been transposed into the RD as new conditions and schedules.

Accidental emissions to sewer could occur in the event of a malfunction of equipment or accidental spill, causing losses to sewer. However, the likelihood of accidental emissions to sewer occurring is considered low considering the measures outlined in the 'Prevention of Accidents' section of this report and in light of the proposed conditions discussed above.

8.3 Discharges to ground/groundwater

8.3.1 Emissions to ground/groundwater

There are no process emissions to ground/groundwater at the installation and there are no storm water discharges to ground authorised under the RD. Most of the site is over an artificial man-made surface and the rest is a neighbouring greenfield site.

Dairygold/TINE is expected to generate up to 2,771 tonnes of WWTP sludge in 2019. The sludges are stored in covered skips and if needed in a holding tank before being sent for landspreading by a third-party contractor, in accordance with a Nutrient Management Plan (NMP). More detail on this is provided under section 10 (waste) of this report.

Assessment and Mitigation:

The installation is located within the Midleton 1 Groundwater Body (GWB) (IE_SW_G_058) which encompasses the limestone valley from Midleton east to the coast at Youghal Bay. The status is 'Good' for 2013-2018.

The underlying aquifer has been classified by GSI as a regionally important aquifer with a karstified diffuse flow regime (RK_d). Groundwater vulnerability is classified as 'Moderate'.

There is an annual groundwater monitoring regime in place since 2012 under the existing Dairygold licence (P0817-01) which involves monitoring of three boreholes, one upgradient (GW1) and two downgradient (GW4 & GW5) of the installation. GW1 is used to supply water for processing. Boreholes GW4 and GW5 are downgradient of the main processing area and the WWTP respectively.

Historic trend analysis highlights exceedances, which are above the interim guideline value (IGV)⁷ and drinking water standards⁸ for nitrate, ammonia, conductivity, phosphate and chloride. The applicant suggests that elevated conductivity and chloride are due to NaCl contamination of the shallow bedrock aquifer, by an unbanded salt store in the southwest of the production site, that has since been decommissioned. Nitrate, ammonia and phosphate may be due to the agricultural inputs in the surrounding area. It is noted that faecal coliform contamination was detected in GW4 in 2014. The applicant suggests this could be from the Mogeely WWTP located adjacent to GW4.

The following mitigation measures will reduce the likelihood of a negative impact on water quality and flora and fauna communities:

- Impervious areas, bunding and containment to prevent contamination to soil/groundwater from spill and leaks;
- Filling procedures in place/over-fill alarms;
- High level sensors in sumps and other chambers where spillage might occur;
- Bunds are integrity tested every three years;
- Delivery areas are designed to ensure that spillages cannot get into the storm water drainage system;
- Much of the installation is covered in concrete hardstanding;
- Drainage incorporating an underground attenuation tank;
- The RD requires groundwater to be monitored (and any additional monitoring locations approved by the Agency) in accordance with *Schedule C.6.1 Groundwater Monitoring*.

Accidental emissions to ground/groundwater could occur if a spill occurred, or leaking pipelines or tanks, causing contamination of the groundwater. However, the likelihood of accidental emissions to ground/groundwater occurring is considered low in light of the measures outlined in the 'Prevention of Accidents' section below and in light of the proposed conditions discussed above.

8.4 EIA on Emissions to Water and Ground

For the purposes of EIA, the environmental factors potentially affected by storm water discharges to waters, emissions to sewer and emissions to ground include: water quality, soil, human beings, flora and fauna.

⁷ Groundwater Threshold Values (GTVs), which are the groundwater quality standards referred to in the Environmental Objectives (Groundwater) Regulations 2010, S.I. No. 9 of 2010, as amended.

⁸ EU (Drinking Water) Regulations SI No. 122 of 2014

Direct and indirect effects

Should any of the infrastructure fail or the WWTP become overloaded, it has the potential to cause an exceedance of water quality standards at the Rathcoursey outfall, this could have implications for flora and fauna at the discharge point. Should accidental emissions occur e.g. spillage as a result of a bund failure, or release of firewater, it has the potential to discharge through the storm water emission points, which could have an impact on the River Womanagh/Kilta and surface waters downstream.

The above assessment indicates that water emissions from the installation under normal operation are not likely to cause a significant direct effect on the above environmental factors. I consider that no secondary or indirect effects are likely as a result of these water emissions from the activity with the controls in place and controls recommended.

Cumulative effects

The assessment carried out above takes account of the total flow in the Irish Water pipeline (sewer network) from all the licensed discharges into the agglomeration. The Midleton WWTP (D0056-01) is controlled by its own WWDL, which specifies ELVs, monitoring and remedial action to be implemented to ensure appropriate protection is afforded to the receiving water environment.

The installation is located a short distance from the Mogeely WWTP (approx. 20m), which is controlled by its a Certificate of Authorisation and requires the authorisation holder to ensure all discharges from the agglomeration contribute towards achieving good status in accordance with the EO Regs. According to the inspector's report (dated 07 November 2017) this agglomeration has a p.e of 299. It is noted also that land use in the surrounding area is mainly centred on agricultural activities, dominated by fertilised grasslands, which may be potential pressures on water quality. These activities are managed and controlled under the Nitrates Regulations⁹.

It is considered that there will be no significant cumulative effect from storm water emissions from the proposed activity and other developments in the area to the River Womanagh/Kilta. The standard conditions in the RD relating to bunding, material handling, storm water attenuation, leak detection, high level alarms and other preventative measures will also aid in preventing any release of contaminated material to ground and surface water.

Based on the above assessment of the installation's emissions to sewer, water and ground, the direct, indirect and cumulative effects have been identified, described and assessed, and are detailed above.

9. Noise

The site is located in the village of Mogeely, bounded to the north by the Midleton to Mogeely road and the Dairygold Agribusiness grain handling facility.

⁹ S.I. No. 605 of 2017 European Union (Good Agricultural Practice for Protection of Waters) Regulations 2017

The Mogeely to Castlemartyr road (L3805) runs parallel to the eastern boundary and across the road is the Cois Maigh Housing estate (approximately 40m from the site boundary). Further residential dwellings are located approximately 150m from the WWTP south east, 30m north west and 20m north east of the installation.

The main sources of noise at the installation include ventilation, extraction fans, delivery truck movements, cheese production lines, boiler house, milk intake area, chiller and compressors. Noise monitoring carried out by the applicant identified the two dominant noise sources in the area as the cheese production lines (Dairygold/TINE) and the dryers belonging to the neighbouring grain handling facility. When in operation either separately or in combination, the noise emissions from these two sources are clearly identifiable at the nearest noise sensitive receptors (NSL).

Assessment and Mitigation

There have been noise complaints received by the Agency in relation to the operation of this installation under the current licence (P0817-01). They mainly related to vehicle use, construction works and the operation of compressors. All complaints to date have been dealt with and closed off.

The most relevant NSLs are all residential dwelling houses in close proximity to the boundary of the installation and referred to as NSL1 (southern boundary), NSL2 (Cois Maigh estate facing the eastern boundary), NSL3 (northern boundary) and NSL4 (western boundary) of the installation. Dairygold/TINE undertook a baseline noise survey and predictive modelling of the operational noise emissions at the four NSLs in 2016 (refer to EIS Volume 2 Chapter 9, Noise and Vibration). The noise monitoring was carried out close to the NSLs, also capturing the operation of the existing grain dryers of the neighbouring Agribusiness.

The results of the impact assessment concluded, following expansion, that the predicted day-time limits (55dB) at the NSL's can be met once the mitigation measures (referred to below) are implemented. The noise levels at NSL1 and NSL2 are within night-time limits (45dB), however, the levels at NSL3 and NSL4 are 46dB and 49dB respectively (with mitigation in place). No tones or impulsive noise were identified at NSL's. According to the applicant, the new TINE cheese production building will act as a noise barrier, thereby reducing the effect of noise emissions from the existing Dairygold site.

The following mitigation measures will be implemented by the applicant:

- equipment with low inherent noise emission levels;
- variable speed drive mitigation at the cheese production lines area (completed already);
- noisy equipment located inside buildings (completed already);
- where appropriate, silencers will be fitted at air inlets and exhausts associated with existing compressors to reduce noise levels. New compressors associated with fire pump house & wastewater treatment plant decanter room will be housed;
- Installation of acoustic louvers providing free ventilation to internal plant and process areas. Louvres on dedicated plant rooms will be orientated away from noise sensitive receptors; and
- Installation of anti-vibration mounts on plant with the potential to generate significant levels of vibration (i.e. reciprocating plant), where appropriate.

Chapter 9 (Noise and Vibration) of the EIS identified trucks temporarily idling while unloading and HGV traffic as a main source of noise.

The expansion will result in an additional 33 HGV deliveries between 4.30am and 5pm per day, a combined total of 77 trucks/day. In order to reduce the severity of impact from this increased truck movement, the RD requires the applicant to ensure that all running engines and refrigeration units of vehicles are switched off during loading, unloading and when the vehicle is parked between the hours of 11pm and 7am every day (night-time hours). If necessary, to maintain chilled storage conditions in a vehicle, this can be done by using the power supply from the installation. All vehicles servicing the site must be properly maintained and the drivers need to be made aware of the potential for noise to cause annoyance to local residents.

The RD imposes the standard daytime/evening/night-time limits of 55 LAr,T /50 LAr,T /45 LAeq,T dB(A) at the NSLs. The RD requires an annual noise survey. A noise survey will also be carried out following commissioning of the new cheese manufacturing plant, not later than three months from date of grant of this licence. Condition 2 of the RD requires the licensee, within six months from date of grant of licence, to include as part of their EMS, a noise management plan that include elements listed in BAT 13 of the FDM BATC (Noise).

Accidental noise emissions could occur if equipment malfunctioned, causing tonal or impulsive noise. However, the likelihood of accidental noise emissions occurring is considered low in light of the measures outlined in the 'Prevention of Accidents' section below and in light of the proposed conditions discussed above.

9.1 EIA on Noise Emissions

For the purposes of EIA, the environmental factors potentially affected by noise emissions from the activity include: human beings, flora and fauna.

Direct and indirect effects

Noise arising from site could have the potential to cause nuisance for those living in the vicinity of the activity or on noise sensitive species near the site. The above assessment indicates that noise from the installation under normal operation are not likely to cause a significant direct effect on the above environmental factors. The likelihood of accidental noise emissions occurring is considered low considering the mitigation measures outlined and the conditions discussed above.

I consider with the controls in place and the new controls recommended that significant direct effects and indirect effects as a result of noise from the activity are unlikely.

Cumulative Effects

The noise survey took account of noise from existing developments in the area, including the Dairygold/TINE site and the Agribusiness grain handling facility, along with traffic on local roads. There are no other developments, installation/facilities or activities in the vicinity that are likely to generate noise to an extent that could lead to likely or significant cumulative effects beyond the site boundary.

Therefore, it is considered that with the controls in place and controls recommended there would not likely to be a significant cumulative effect from noise emissions from the proposed activity and other noise emissions generated by other activities/developments in the area. Based on the above assessment of the installation's noise emissions, the direct, indirect and cumulative effects have been identified, described and assessed, and are detailed below.

10. Waste /Organic Material Generation

The operation of the installation will result in the generation of hazardous and non-hazardous waste which will be segregated at source.

Assessment and Mitigation:

Hazardous wastes generated include laboratory chemicals, fluorescent tubes and discarded plant equipment. Non-hazardous wastes (~155t/yr.) include packaging and canteen waste which are sent off-site for recovery and mixed municipal waste, which is sent for disposal and recovery. The applicant states that where feasible by-products generated during the cheese manufacturing are re-used within the industry.

Sludges arise from the biological waste water treatment plant, includes DAF unit sludge and sludge from the clarifiers. These sludges are transferred to the picket fence thickener and centrifuge where sludge is thickened to approximately 15% solids. WWTP sludges are analysed annually for % Dry matter, total N, total P and total K in accordance with *Schedule C.4* of IE Licence reg no P0817-01. The nutrient content of the sludge for 2019 was estimated to be 4.7kgP/tonne and 8.1 kgN/tonne based on analysis of sludge from 2018.

Sludge is landspread in accordance with a Nutrient Management Plan (NMP), which was approved by the Agency on 23 January 2019 under licence reg no P0817-01. The NMP identifies approximately 855 hectares of land on seventeen farms in County Cork, with a capacity to recover 3251t/yr. of sludge. In 2019, the estimated volume of sludge to be landspread is 2,000t. The applicant expects a significant increase in sludge generated to ~2,771t/yr. following the WWTP upgrade and expansion onsite.

All storage of sludge is on-site. The Nitrate Regs, specify 16 weeks storage for Co. Cork for organic fertiliser, which is considered appropriate for sludge (condition 3). There is on-site capacity for 924m³. There are two covered skips with a capacity of 12m³ each and one open fixed concrete tank with a capacity of 900m³. The applicant has demonstrated that there is adequate recovery capacity. There may be odour losses during storage, filling and emptying of this open sludge storage tank. The horizontal BAT reference document entitled 'Emissions from Storage' (July 2006) states that if emissions to air occur, BAT is to cover the tank by applying a floating, flexible or ridged cover. The type of cover and necessity for applying it can be addressed under the Odour Management Plan (condition 2), which shall as a minimum address sludge treatment and storage areas.

Landspreading is not conducted and permitted within the installation boundary. While impacts could occur on or near the spreadlands (nuisance, pollution of water/groundwater/soil, impacts on flora and fauna) the IE licence only regulates the activities within the site boundary. The landspreading of material is controlled separately under *Nitrates Regs and Waste Management Acts, 1996 as amended* and will be monitored and controlled by the Department of Agriculture, Food and the Marine and the Local Authorities. Condition 8 of the RD requires that records are maintained regarding the export of WWTP sludge off-site.

In 2015, Dairygold submitted a notification of by-product status to the Agency under Article 27 of the European Communities (Waste Directive) Regulations, 2011 concerning their WWTP sludge. The decision is the operator's as to whether a substance is a by-product and on making the notification they are entitled to manage it as a by-product.

'Organic fertiliser' is defined in the Nitrates Regulations to include 'non-farm organic substances such as sewage sludge, industrial by-products and sludges and residues from fish farms'. *Schedule C.4 Waste and Organic Fertiliser Monitoring* specifies biannual monitoring of the WWTP sludge. If the Agency considers that the WWTP sludge is not a by-product then it remains a waste.

If dealt with in accordance with the conditions of the RD, the management of wastes generated will be in accordance with the requirements of Article 11(e) of the Industrial Emissions Directive (i.e. where waste is generated, it is in order of priority prepared for re-use, recycled, recovered or where that is technically or economically impossible, disposed of).

10.1 EIA on waste generation

For the purposes of EIA, the environmental factors potentially affected by organic fertiliser/organic sludge and waste generated by the activity include: human beings, flora and fauna, soil, water, air and material assets.

The storage of uncovered organic fertiliser/organic sludge at the installation could attract pests/rodents to the installation. Where infestation by pests occurs, this has negative secondary effects for humans in terms of amenity and potentially spread of disease. Predation and spread of disease could also be an issue for flora and fauna beyond the installation boundary. Organic fertiliser/organic sludge arising from site and transported off-site for landspreading could have the potential to cause odour nuisance for those living in the vicinity of the activity.

Based on the above assessment of waste generated by the activity, the direct, indirect and cumulative effects have been identified, described and assessed, and are detailed below.

Direct and indirect effect

The above assessment indicates that waste from the installation under normal operation are not likely to cause a significant direct effect on the above environmental factors. Accidental emissions could occur if waste/organic material/organic sludge is not managed or stored correctly which may lead to litter or pollution issues on the site or adjacent sites. The controls in the RD in relation to waste/organic material will prevent the occurrence of possible direct and indirect negative effects on the environment

Cumulative effect

The controls in the RD in relation to waste will prevent the occurrence of possible negative effects. Therefore, significant cumulative effects on the environment from the generation of wastes by this installation and other developments are not likely. Based on the above assessment, the mitigation measures in place or proposed, and the conditions in the RD, I am satisfied that there will not be significant effects on the environment from the generation of wastes from the operation of the activity.

The likelihood of accidental waste /organic material emissions occurring is considered low in light of the measures outlined in the 'Prevention of Accidents' section below and in light of the conditions referred to above.

11. Use of Resources

The applicant has provided a comprehensive list of resources consumed at the installation; these are listed in the application form. The operation of the installation

involves the consumption of water, electricity and natural gas. The estimated quantities used per annum (following expansion) are given below.

Resource	Quantity per annum
Electricity	18,000MWh
Natural Gas	3,000,000m ³
Water – Public Supply	3,504m ³
Water - Groundwater	511,000m ³ /year

Assessment and mitigation

The main raw materials used on site are: raw milk (530,000 t/yr.), PVD Salt (food grade) (830 t/yr.) and sodium hydroxide (364t/yr.).

Annex III of the IED specifies criteria for the determination of BAT, including the consumption and nature of raw materials (including water) used in the process and energy efficiency. Accordingly, and in the application of BAT, Condition 7 of the licence provides for the efficient use of resources and energy in all site operations. It requires the applicant to establish, implement and maintain an Energy Efficiency Plan and an energy audit to be carried out within one year of the date of grant of licence. The FDM BATC on Energy Efficiency should be referred to in the context of the Energy Efficiency Plan. The RD also specifies that the EMS Schedule of Environmental Objectives and Targets shall include an evaluation of options for energy and resource efficiency, reduction in water consumption, reduction in effluent generation and optimisation of Cleaning in Place (CIP) system.

The applicant intends to abstract up to 1,400m³/day from one borehole (GW1) situated at the north eastern edge of the site, for process water purposes. *Schedule C.6.3 Abstraction Well Monitoring* of the RD requires the applicant to monitor continuously (during abstraction) flow rate and groundwater level. This data is important to ensure balance between abstraction and the recharge rate of groundwater. In accordance with the *European Union (Water Policy) (Abstractions Registration) Regulations 2018* the applicant has registered (R00423-01) this groundwater abstraction as they abstract >25 cubic meters (>25,000 litres) of water or more each day.

11.1 EIA on Use of Resources

For the purposes of EIA, the environmental factors potentially affected by the use of resources at the activity include: Material assets, water, soil, land and flora and fauna. Based on the above assessment of the installation's use of resources, the direct, indirect and cumulative effects have been identified, described and assessed, and are detailed below.

Direct and Indirect Effects:

The likelihood of accidental releases of these substances to the environment, as a result of the licensable activity is low in light of the measures outlined below under 'Prevention of Accidents' and the conditions discussed above. I am satisfied that there will not be significant effects on the environment from the use of natural resources from the operation of the activity.

Cumulative effects:

The installation main processing site is located on the edge of Mogeely Village. Significant cumulative effects on the environment from the use of resources by this installation and other developments are not likely.

12. Prevention of Accidents

The operation of any activity involves a certain amount of risk to the environment and human health. The table below specifies the risks and associated safety measures relevant to his installation.

Potential accidents & measures for prevention/limitation of consequences	
Potential for an accident or hazardous/emergency situation to arise from activities at the installation.	<ul style="list-style-type: none"> - Overloading of the WWTP due to spillage or malfunction. - Milk spills due to loading/unloading, storage and processing. - Spill or release of sludge from sludge storage area. - Release of cleaning chemicals. - Release of fuel from tankers. - Risk of preventative/mitigation measures failing.
Preventative/mitigation measures to reduce the likelihood of accidents and mitigate the effects of the consequences of an accident at the installation.	<ul style="list-style-type: none"> - The RD requires high level alarms on pumps, sumps, storage tanks and other treatment plant chambers. - The milk intake area is bunded so that in the event of spills, milk will be routed to the WWTP. - Firewater retention tank if required can be used for temporary storage of wastewater. - Maintenance of bunding and integrity testing of bunds and pipelines. - Continuous monitoring of storm water and automatic diversion in place. - In the event of a fire, production will stop, and the storm water drains will be diverted to the WWTP. - Continuous monitoring of treated effluent at inlet to tidal holding tank - Standard operating procedures for loading/unloading of materials.
Additional measures provided for in the RD	<ul style="list-style-type: none"> - Notify EPA of incidents. - Requirement of bunds. - Requirement and maintenance of class I full retention interceptors. - Firewater retention. - Requirement of high-level alarms. - Integrity of tanks to be assessed within twelve months of the date of grant of this licence - An inspection system for the detection of leaks on all flanges and valves. - Storm water discharge points to be continuously monitored and the setting of trigger levels. - Specifies accident prevention and emergency response requirements. - A test programme to be completed for the upgrade of the WWTP.

Assessment and mitigation:

Condition 9 of the RD requires procedures to be put in place to prevent accidents with a possible impact on the environment and to respond to emergencies so as to minimise the impact on the environment. The risk of accidents and their consequences, and the preventative and mitigation measures listed in the table above, have been considered in full in the assessments carried out throughout this report.

Conclusion:

It is considered that the conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

13. Cessation of activity

The applicant has provided a general list of measures to be taken in the event of site closure/cessation of activity. Condition 10 of the RD requires the applicant to affect the proper closure of the activity to the satisfaction of the Agency by decommissioning, rendering safe or removing for disposal/recovery, buildings, plant or equipment, or any waste, materials or substances that may result in environmental pollution.

Assessment and mitigation:

Baseline Report

Article 22(2) of the IED requires that where the activity involves the use, production or release of relevant hazardous substances and having regard to the possibility of soil and groundwater contamination at the site of the installation, the operator shall prepare and submit to the competent authority a baseline report before proposed expansion of the installation. The baseline report is a tool that permits, as far as possible, a quantified comparison between the state of the site described in that report and the state of the site upon definitive cessation of activities, in order to ascertain whether a significant increase in pollution of soil or groundwater has taken place.

There is a groundwater monitoring regime (since 2012) at the site under the existing licence (P0817-01), which involves annual monitoring of upgradient and downgradient boreholes. There is no reported evidence to date of any significant leakage of relevant hazardous material to ground or receiving water. The installation has been in operation since 1973 and the site has been developed over the intervening years. The majority of the site is covered in concrete hardstanding.

A Baseline Report was not provided with the licence application. The Agency determined that a Baseline Report was required having regard to the possibility of soil and groundwater contamination. A baseline report (dated: April 2019) was submitted to the Agency in response to a Regulation 10 letter on the 07 June 2019. The main hazardous substances used on-site are listed under attachment 4.6.2 (Raw materials, intermediates and products) of the application and are identified as gas oil, disinfectants, detergents and wastewater treatment chemicals.

All relevant hazardous substances will be stored in designated areas with minimal if any risk of soil/groundwater contamination. Higher risk areas such as milk intake are contained systems which are diverted to the WWTP in the event of accidental spillage on site. Soil samples were also taken and tested (in early 2019) for a broad range of parameters used on site. The soil samples were determined to be below guideline values, indicating no evidence of contamination associated with the use of hazardous substances.

Condition 10 of the RD requires the applicant to affect the proper closure of the activity to the satisfaction of the Agency by decommissioning, rendering safe or removing for disposal/recovery, buildings, plant or equipment, or any waste, materials or substances that may result in environmental pollution. The RD requires groundwater monitoring for relevant hazardous substances to be carried out every 5 years, and soil monitoring

to be carried out every 10 years in accordance with the requirements of the IED. The substances for monitoring shall be identified by undertaking a risk-based assessment.

13.1 EIA on Accidents and Cessation

The environmental factors potentially affected by accidents at the installation, or the cessation of activity, include: material assets, human beings, flora and fauna, air, soil and water. Based on the above assessment of accidents and cessation, the direct, indirect and cumulative effects have been identified, described and assessed, and are detailed below.

Directs and Indirect Effects:

Accidental emissions are addressed in this report (sections on air, water, noise, waste generation, use of resources, prevention of accidents). It is considered that the conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur. It has been determined that, upon completion of implementation of the closure plan specified in the RD, the installation would be in a suitable state for future industrial use and would not pose a risk to public health and safety or the environment.

Given the above, it is considered that the proposed activity is not likely to lead to residual issues upon eventual closure of the site. I am further satisfied that there will not be significant effects on the environment from cessation of the activity provided the measures specified in Condition 10 of the RD have been correctly implemented.

Cumulative Effects:

It is considered very unlikely that accidents or closure would occur concurrently at neighbouring installations that would give rise significant effects on the environment.

14. Other matters relating to EIA

14.1 Effects on material assets, cultural heritage and landscape

(a) Material assets

Chapter 13 of the EIS addresses Material assets, which is taken to mean roads, built services and waste generation. The latter item is presented in Section 10 of this report. The impact of traffic movements associated with the development is dealt with in the decision of the planning authority to grant planning permission for the installation and are not controlled by the Agency.

The two parts of the installation (main processing site and WWTP) are existing sites. There are sufficient supplies of electricity, natural gas and water to serve the requirements of the expansion. These matters are dealt with in the decision of the planning authority to grant planning permission for the developments onsite and are not controlled by the Agency. The planning authority has considered the effect to be acceptable. I am satisfied that there will not be significant effects on materials assets from the operation of the activity, as respects the matters that come within the functions of the Agency. No mitigation measures are proposed in the RD.

(b) Cultural heritage including archaeology and architecture

The site has been in operation since 1973, just south of Mogeely village. Chapter 10 of the EIS, addresses archaeology and cultural heritage. Any loss of archaeological or architectural heritage could impact negatively on human beings. These matters are dealt with in the decision of the planning authority to grant planning permission for

the expansion onsite and are not controlled by the Agency. The planning authority has considered the effect to be acceptable. No mitigation measures have been proposed in the RD.

There are no buildings or features of architectural significance and no known archaeological features within the site boundary. There is a total of 55 recorded archaeological sites listed in the Record of Monuments and Places for Co Cork and the Sites and Monuments Record Database of the National Monuments Service within 1km of the site boundary. There are seven archaeological sites which adjoin the road along which the proposed pipeline will run including a vernacular house, an enclosure, a church and graveyard, two fulachtaí fia and a midden. The pipeline route will run along the existing road network within the footprint of the hard-surfaced area of the road.

(c) Landscape

Any disturbance of the landscape or the cultural heritage of an area has the potential to impact on human beings and their enjoyment of the surrounding area. These matters are dealt with in the decision of the planning authority to grant planning permission for the developments on site and are not controlled by the Agency. The planning authority has considered the effects to be acceptable.

No additional mitigation measures have been proposed in relation to (a), (b) and (c) above.

Direct, Indirect and Cumulative Effect

There are no cumulative, direct or indirect effects on the landscape, material assets and visual impact of the site likely to arise from the activity as there is no new development involved. Emissions from the operation of the activity will not affect the agricultural landscape and culture of the area.

15. Environmental Impact Assessment

15.1 Statutory Provisions

This EIA has had regard to the information provided by the applicant, received through consultation, written submissions, as well as considering any supplementary information where appropriate and includes the licence assessment completed in this Report.

I have carried out an examination, analysis and evaluation of the information provided by the applicant, including the EIS, received through consultation, written submissions, as well as considering any supplementary information, where appropriate. A summary of the submission made by the planning authorities is provided in Section 5 of this report. A summary of the submissions made by third parties have been set out at Section 6 of this report.

15.2 Alternatives

The matter of alternatives is addressed in Chapter 3 (Alternative Considered) of the EIS, in terms of choice of location for the new cheese plant, scale and design and new treated effluent discharge pipeline. Supplementary information on alternatives was also submitted by the applicant on the 27 August 2019. Dairygold is an existing cheese manufacturing plant and has been in operation since 1973. TINE sought to find a suitable location outside of Norway to produce Jarlsberg cheese and decided to co-locate with Dairygold due to the opportunity to share services, experience and

production techniques. Alternative disposal options were also considered for the disposal of treated wastewater, i.e.:

- discharging further downstream of the River Womanagh/Kilta (insufficient capacity);
- infiltration to groundwater (area liable to flooding);
- constructed wetland (impractical due to the amount of land needed).

While these alternative options were investigated, from a feasibility and operational perspective it was necessary to discharge treated effluent to Cork Harbour via Rathcoursey outfall following consent from Irish Water. In this regard, I consider that the matter of the examination of alternatives has been satisfactorily addressed.

15.3 Likely Significant Direct and Indirect Effects

The likely significant direct and indirect effects of the development are considered in this Inspector's Report under the following headings:

15.3.1 Human Beings

Overall Conclusions:

The likely significant direct and indirect effects of the development on human beings has been identified, described and assessed in previous Sections 7, 8, 9, 10, 11, 12 & 13 of this Report. I have examined all the information on human beings, provided by the applicant, received through consultation, written submissions as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures proposed and through the conditions of the RD. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of human beings.

15.3.2 Flora and Fauna

Overall Conclusions:

The likely significant direct and indirect effects of the development on flora and fauna has been identified, described and assessed in Sections 7, 8, 9, 10, 11, 12 & 13 and Section 16 on Appropriate Assessment of this Report. I have examined all the information on flora and fauna provided by the applicant, received through consultation, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures proposed and through the conditions of the RD. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of flora and fauna.

15.3.3 Soil

Overall Conclusions:

The likely significant direct and indirect effects of the development on soil have been identified, described and assessed in Sections 8, 10 & 11 of this Report. I have examined all the information on soil provided by the applicant, received through consultation, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures proposed and through the conditions of the RD. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of soil.

15.3.4 Water

Overall Conclusions:

The likely significant direct and indirect effects of the development on water have been identified, described and assessed in Sections 8, 10, 11, 12 & 13 of this Report. I have examined all the information on emission to waters; storm water discharges; emissions to ground/groundwater and emissions to sewer discharges provided by the applicant, received through consultation, written submission, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures and through the conditions of the RD. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of waste water discharges; storm water discharges; emissions to ground or groundwater.

15.3.4 Air

Overall Conclusions:

The likely significant direct and indirect effects of the development from emissions to air have been identified, described and assessed in Sections 7, 9, 10, 12, 13 & 16 of this Report. I have examined all the information on air provided by the applicant, received through consultation, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures proposed by the applicant and through the conditions of the RD. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of air.

15.3.5 Climate

Overall Conclusions:

The likely significant direct and indirect effects of the development under the heading climate has been identified, described and assessed in Section 7 of this Report. I have examined all the information on climate provided by the applicant, received through consultation, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures proposed and through the conditions of the RD. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of climate.

15.3.6 Landscape, Material Assets and Cultural Heritage

Overall Conclusions:

The likely significant direct and indirect effects of the development under the heading's material assets, cultural heritage and the landscape has been identified, described and assessed in Sections 11, 12 & 13 of this Report. I have examined all the information on material assets and cultural heritage and the landscape provided by the applicant, received through consultation, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures proposed. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of material assets, cultural heritage and the landscape.

15.3.7 Interactions of the foregoing

I have considered the interaction between human beings, flora and fauna, soil, water, air, climate, landscape, material assets, cultural heritage and the interaction of the likely effects identified throughout this report. The interaction between factors as a result of the operation of the installation are summarised below:

Human beings

Potential impacts due to noise, emissions to air, soil, climate and water. As demonstrated in earlier parts of this report such effects are not considered significant.

Water, soil, air and flora and fauna

Potential impacts from spillages, leaks or accidental discharges of effluent, milk or other substances to ground may directly and indirectly impact on soil, ground water, surface water and aquatic habitats and flora and fauna. As demonstrated such impacts are considered not to be likely or significant.

Based on the assessment carried out throughout this report, and the mitigation measures proposed (including the relevant conditions in the licence), I do not consider that the interactions identified are likely to cause or exacerbate any potentially significant environmental effects of the activity.

15.4 Vulnerability of the Project

The Seveso Directive and Regulations are not applicable at the installation. The risks of accidents associated with the activity are dealt with in Section 12 of this report. Consequently, no specific mitigation measures have been proposed in relation to these effects.

The vulnerability of the installation to natural disasters has been examined. Climate change impacts such as heat waves, droughts, extreme rainfall, storms and winds, landslides and rising sea levels could impact negatively on human beings, flora and fauna, soil, water, air, material assets, cultural heritage and landscape. Flooding was considered to be the only natural disaster that may possibly impact the installation.

A comprehensive stage 1-3 Flood Risk Assessment was carried out by Malachy Walsh and Partners, Consulting Engineers, dated 25 November 2016. The assessment concluded that the River Kilta, which runs along the western boundary of the site, is a potential source of flooding. The existing WWTP (which has been upgraded) is located entirely within Flood Zone A where the probability of flooding from rivers and the sea is highest (greater than 1% or 1 in 100 for river flooding or 0.5% or 1 in 200 for coastal flooding) and as such it is in the highest probability flood zone. Various mitigation measures were recommended and implemented in order to minimise the flood risk at this portion of the site. The upgraded WWTP is constructed to finish above the maximum 1% AEP¹⁰ Flood (including Climate Change) level to ensure no risk of wash-out during an extreme flood event. The Control and Dewatering building will be raised by 1 metre above existing ground level to provide equal flood protection. All tanks are constructed with an impermeable barrier around the perimeter. The existing ground levels within the WWTP have not been increased. According to the report, almost all of the main site is within Flood Zone B and C and these areas are therefore appropriate for development. The Planning Authority has considered the effect to be acceptable. No mitigation measures have been proposed in the RD. The report concluded that development of the site is appropriate in the context of the Development Plan objectives and the Planning System and Flood Risk Management Guidelines.

¹⁰ Annual exceedance probability – probability of a flood of a given magnitude occurring or being exceeded in any given year.

Conclusion

The vulnerability of the project to risks of major accidents and/or disasters has been identified, described and assessed. I have examined all the information provided by the applicant, received through consultation, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the RD.

15.5 Reasoned Conclusion on the significant effects

Having regard to the examination of environmental information contained above, and in particular to the EIS and supplementary information provided by the applicant, and the submissions from third parties in the course of the application, it is considered that the significant direct and indirect effects of the activities on the environment are as follows:

- Generation of effluent and discharge to sewer;
- Emissions to air of nitrogen oxides from boilers;
- Noise emissions; and
- Leakages or spills to storm water and groundwater.

Having assessed those potential effects, the Agency has concluded as follows:

- Generation of process emissions and discharge to sewer will be mitigated through: imposing emission limit values for treated effluent leaving the installation, and implementing monitoring, maintenance and control measures. The combined discharge to the North Channel (via Rathcoursey outfall) is further regulated by the EPA under the second schedule of the Waste Water Discharge (Authorisation) Regulations, 2007 by way of a wastewater discharge licence (D0056-01).
- Emissions to air (nitrogen oxides) will be mitigated through: imposing emission limit values to ensure compliance with ambient air quality standards; and implementing monitoring, maintenance and control measures;
- Noise emissions will be mitigated through; imposing daytime, evening-time and night-time noise limits at NSLs; implementation of maintenance, control measures, noise management plan and ongoing monitoring;
- Accidental leakages or spills will be mitigated through integrity testing; setting of trigger levels at storm water monitoring points, inspection and maintenance of tanks and bunds and accident and emergency requirements specified in the licence.

Having regard to the effects (and interactions) identified, described and assessed throughout this report, I consider that the monitoring, mitigation and preventative measures proposed will enable the activity to operate without causing environmental pollution, subject to compliance with the licence. Accordingly, if the activity is carried out in accordance with the RD and the conditions attached, the operation of the activity will not cause environmental pollution. The conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

16. Appropriate Assessment

Appendix 3 lists the European Sites assessed, their associated qualifying interests and conservation objectives along with the assessment of the effects of the activity on the European Sites.

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the activity, individually or in combination with other plans or projects is likely to have a significant effect on any European Site. In this context, particular attention was paid to the European Sites at Cork Harbour SPA (site code: 004030) and Great Island Channel SAC (site code: 001058), Ballymacoda (Clonpriest and Pillmore) SAC (site code: 00007) and Ballymacoda Bay SPA (site code: 004023)

The activity is not directly connected with or necessary to the management of any European Site and the Agency considered, for the reasons set out below, that it cannot be excluded, on the basis of objective information, that the activity, individually or in combination with other plans or projects, will have a significant effect on any European Site and accordingly determined that an Appropriate Assessment of the activity was required, and for this reason determined to require the applicant to submit a Natura Impact Statement.

This determination has been made on the basis that emissions from the activity may cause adverse impact on water quality. It is noted that a Natura Impact Statement for the purposes of planning was submitted in support of the licence application.

An inspector's Appropriate Assessment has been completed and has determined, based on best scientific knowledge in the field and in accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 as amended, pursuant to Article 6(3) of the Habitats Directive, that the activity, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site, in particular the European Sites specified in Appendix 3, having regard to their conservation objectives and will not affect the preservation of these sites at favourable conservation status if carried out in accordance with this recommended determination and the conditions attached hereto for the following reasons:

- The proposed RD requires the applicant to meet ELVs set under *Schedule B.3 Emissions to Sewer* for SEM1 (treated effluent discharge from the onsite WWTP). This treated effluent is further regulated by the EPA by way of a WWDL (D0056-01) and subject to compliance with the limits specified in the Urban Waste Water Treatment Regulations, 2001.
- Air dispersion modelling has demonstrated that air emissions from the installation will not cause breaches of relevant air quality standards beyond the installation boundary. Therefore, air emission will not have a significant effect on the qualifying interests of any European Site.
- Storm water run-off is discharged to the River Womagh/Kilta. Class I full retention separators are installed on all storm water emission points. All storm water can be diverted to the onsite WWTP in the event of an exceedance of a trigger level.
- The RD requires the applicant to meet ELVs at noise sensitive locations set in *Schedule B.4 Noise Emissions* to ensure that the emissions will not have a negative impact on the surrounding environment;
- The licence contains standard conditions in relation to the storage and management of materials and wastes.
- The RD specifies that all tank, container and drum storage areas shall be rendered impervious to the materials stored therein. It also requires that pump sumps, storage tanks, and treatment plant chambers shall be fitted with high liquid level alarms.

- While there is potential for accidents and unplanned releases from the installation, it is considered that the conditions of the RD in relation to bunding and the protection of surface water and groundwater, are sufficient to ensure that accidental emissions from the activity will not impact on the qualifying interests of any of the European sites identified above. The RD specifies accident prevention and emergency response requirements.

In light of the foregoing reasons no reasonable scientific doubt remains as to the absence of adverse effects on the integrity of those European Sites specified in Appendix 3.

17. Fit & Proper Person Assessment

The Fit & Proper Person test requires three elements of examination:

Technical Ability

The applicant has provided details of the qualifications, technical knowledge and experience of key personnel. The licence application also includes information on the on-site management structure. It is considered that the applicant has demonstrated the technical knowledge required.

Legal Standing

Dairygold Co-operative Society Limited, has been prosecuted and convicted under the EPA Acts 1992, as amended, for offences at other sites. Dairygold was convicted in March 2004, for offences committed the previous year at the Mitchelstown installation (Licence Reg. No. P0404-02); in relation to the exceedance of ELVs for emissions to sewer and non-notification of a malfunction in the WWTP. TINE Ireland Ltd have not been prosecuted under the EPA Acts, as amended.

Financial Provision/Strength

ELRA, CRAMP & FP

The licence category and proposed installation was assessed for the requirements of Environmental Liabilities Risk Assessment (ELRA), Closure, Restoration and Aftercare Management Plan (CRAMP) and Financial Provision (FP), in accordance with Agency guidance. Under this assessment it has been determined that ELRA, CRAMP and FP were not required.

Fit & Proper Conclusion

Having regard to the provisions of Section 84(5) of the EPA Acts and the Conditions of the RD, the Agency is satisfied for the reasons set out in the inspector's report that the applicant has the expertise and resources necessary to comply with its licence. The Agency considers that it would be disproportionate to refuse its licence on account of the convictions in relation to prescribed offences in 2004 relating to another installation, and the Agency therefore regards it as a fit and proper person for the purpose of this application.

18. Cross Office Consultation

I consulted with OEE Inspector, Thomas Wallace in relation to compliance and operation of the site. I consulted with OEA Scientist, Dr. Sorcha Ni Longphuirt in relation to coastal modelling, tidal movement and water quality of the North Channel and Cork Harbour. I consulted with Nigel Hayes (water management programme) in relation to WFD classifications and Philip Maher (hydrometric and groundwater section) in relation to groundwater abstraction. I consulted with licensing inspectors, Rachel

Neeson and Marion Doyle in relation to AA and EIA. I consulted with Brian Coffey and John Feehan (wastewater enforcement team) in relation to Irish Water compliance with Midleton WWDL (D0056-01). In general, the OEE have no significant concerns regarding the proposed changes to the activity.

19. Charges

The annual enforcement charge recommended in the RD is **€23,000**, which reflects the anticipated enforcement effort required and the cost of monitoring.

20. Recommendation

The RD specifies the necessary measures to provide that the installation shall be operated in accordance with the requirements of Section 83(5) of the EPA Act 1992 as amended and has regard to the AA and EIA. The RD gives effect to the requirements of the Environmental Protection Agency Acts 1992 as amended and has regard to submissions made.

I recommend that a Proposed Determination be issued subject to the conditions and for the reasons as drafted in the RD.

Signed



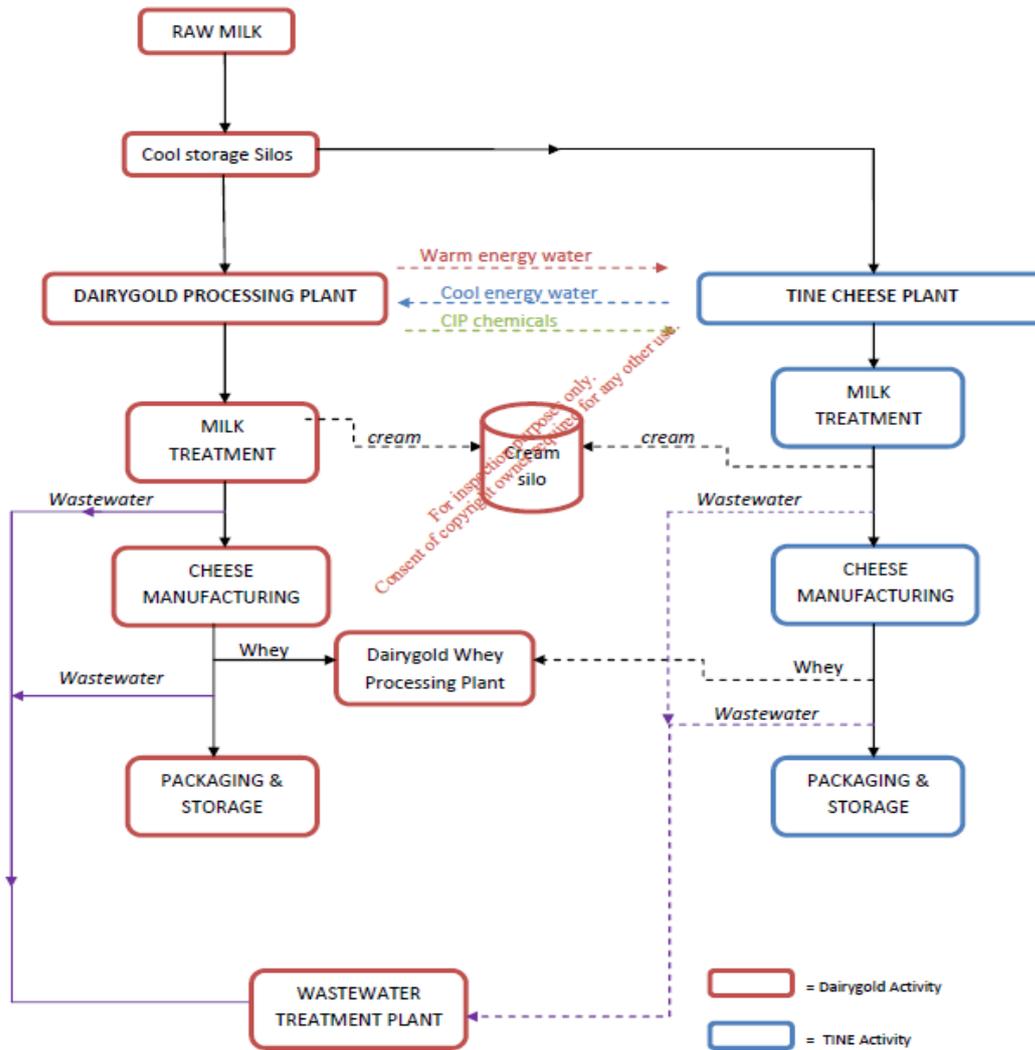
Orla Harrington

Procedural Note

In the event that no objections are received to the Proposed Determination on the application, a licence will be granted in accordance with Section 87(4) of the Environmental Protection Agency Acts 1992 as amended, as soon as may be after the expiration of the appropriate period.

Appendices

Appendix 1- Overview of exchange of goods and services between Dairygold and TINE.



Appendix 3

AA table

Appendix 3: Assessment of the effects of activity/discharges on European sites and proposed mitigation measures.

European Site (site code)	Qualifying Interests (* denotes priority habitat)	Conservation Objectives	Assessment
Great Island Channel SAC (001058)	<p>Habitats 1140 Mudflats and sandflats not covered by seawater at low tide 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)</p>	<p>NPWS (2014) Conservation objectives: Great Island Channel SAC [001058]. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.</p>	<p><u>Emissions to Water:</u> The main potential for impact would arise from changes in water quality which could affect the habitats and species directly or could affect the water dependant prey on which the qualifying species depend. Refer to section 8 (water).</p> <p><u>Air emissions:</u> The main potential for impact would arise from changes in air quality which could affect the habitats directly. Air dispersion modelling demonstrates that the impact of emission from the installation will be below relevant air quality standards. Refer to section 7.</p> <p><u>Noise emissions:</u> Due to the distance from the European Sites, noise will not have a significant effect on the sensitive receptors within the European Sites. Refer to section 9.</p> <p><u>Potential for accidents to arise:</u> There is the potential for accident/hazardous and emergency situations arising from the operation of the installation which could affect the habitats. Refer to section 12.</p>
Cork Harbour SPA (004030)	<p>Habitat Wetlands</p> <p>Species Little Grebe <i>Tachybaptus ruficollis</i>, Great Crested Grebe <i>Podiceps cristatus</i>, Cormorant <i>Phalacrocorax carbo</i>, Grey Heron <i>Ardea cinerea</i>, Shelduck <i>Tadorna tadorna</i>, Wigeon <i>Anas penelope</i>, Teal <i>Anas crecca</i>, Pintail <i>Anas acuta</i>, Shoveler <i>Anas clypeata</i>, Red-breasted Merganser <i>Mergus serrator</i>, Oystercatcher <i>Haematopus</i></p>	<p>NPWS (2014) Conservation Objectives: Cork Harbour SPA [004030]. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.</p>	<p><u>Emissions to Water:</u> The main potential for impact would arise from changes in water quality which could affect the habitats and species directly or could affect the water dependant prey on which the qualifying species depend. Refer to section 8 (water).</p> <p><u>Air emissions:</u> The main potential for impact would arise from changes in air quality which could affect the habitats and species directly. Air dispersion modelling demonstrates that the impact of emissions from the installation will be below relevant air quality standards. Refer to section 7.</p> <p><u>Noise emissions:</u> Due to the distance from the European Sites, noise will not have a</p>

European Site (site code)	Qualifying Interests (* denotes priority habitat)	Conservation Objectives	Assessment
	<p><i>ostralegus</i>, Golden Plover <i>Pluvialis apricaria</i>, Grey Plover <i>Pluvialis squatarola</i>, Lapwing <i>Vanellus vanellus</i>, Dunlin <i>Calidris alpina alpina</i>, Black-tailed Godwit <i>Limosa limosa</i>, Bar-tailed Godwit <i>Limosa lapponica</i>, Curlew <i>Numenius arquata</i>, Redshank <i>Tringa tetanus</i>, Black-headed Gull <i>Chroicocephalus ridibundus</i>, Common Gull <i>Larus canus</i>, Lesser Black-backed Gull <i>Larus fuscus</i>, Common Tern <i>Sterna hirundo</i></p>		<p>significant effect on the sensitive receptors within the European Sites. Refer to section 9.</p> <p><u>Potential for accidents to arise:</u> There is the potential for accident/hazardous and emergency situations arising from the operation of the installation which could affect the habitats. Refer to section 12.</p>
<p>Ballymacoda (Clonpriest and Pillmore) SAC (000077)</p>	<p>Habitats Estuaries Mudflats and sandflats not covered by seawater at low tide <i>Salicornia</i> and other annuals colonising mud and sand Atlantic salt meadows (Glauco-Puccinellietalia maritimae)</p>	<p>NPWS (2015) Conservation Objectives: <i>Ballymacoda (Clonpriest and Pillmore) SAC [000077] Version 2 National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs</i></p>	<p><u>Emissions to Water:</u> The main potential for impact would arise from changes in water quality which could affect the habitats and species directly or could affect the water dependant prey on which the qualifying species depend. Refer to section 8 (water).</p> <p><u>Air emissions:</u> The main potential for impact would arise from changes in air quality which could affect the habitats directly. Air dispersion modelling demonstrates that the impact of emission from the installation will be below relevant air quality standards. Refer to section 7.</p> <p><u>Noise emissions:</u> Due to the distance from the European Sites, noise will not have a significant effect on the sensitive receptors within the European Sites. Refer to section 9.</p> <p><u>Potential for accidents to arise:</u> There is the potential for accident/hazardous and emergency situations arising from the operation of the installation which could affect the habitats. Refer to section 12.</p>
<p>Ballymacoda Bay SPA (004023)</p>	<p>Habitat Wetlands Species Wigeon <i>Anas penelope</i>, Teal <i>Anas crecca</i>, Ringed Plover <i>Charadrius hiaticula</i>, Golden Plover <i>Pluvialis apricaria</i>, Grey Plover <i>Pluvialis squatarola</i>, Lapwing <i>Vanellus vanellus</i>, Sanderling <i>Calidris alba</i>, Dunlin <i>Calidris alpina alpina</i>,</p>	<p>NPWS (2015) Conservation objectives for <i>Ballymacoda Bay SPA [004023] version 1 National Parks and Wildlife Service, Department of Arts, Heritage, Regional,</i></p>	<p><u>Emissions to Water:</u> The main potential for impact would arise from changes in water quality which could affect the habitats and species directly or could affect the water dependant prey on which the qualifying species depend. Refer to section 8 (water).</p> <p><u>Air emissions:</u> The main potential for impact would arise from changes in air quality which could affect the habitats directly. Air dispersion modelling demonstrates that the</p>

European Site (site code)	Qualifying Interests (* denotes priority habitat)	Conservation Objectives	Assessment
	Black-tailed Godwit <i>Limosa limosa</i> , Bar-tailed Godwit <i>Limosa lapponica</i> , Curlew <i>Numenius arquata</i> , Redshank <i>Tringa tetanus</i> , Turnstone <i>Arenaria interpres</i> , Black-headed Gull <i>Chroicocephalus ridibundus</i> , Common Gull <i>Larus canus</i> , Lesser Black-backed Gull <i>Larus fuscus</i>	<i>Rural and Gaeltacht Affairs</i>	<p>impact of emission from the installation will be below relevant air quality standards. Refer to section 7.</p> <p><u>Noise emissions:</u> Due to the distance from the European Sites, noise will not have a significant effect on the sensitive receptors within the European Sites. Refer to section 9.</p> <p><u>Potential for accidents to arise:</u> There is the potential for accident/hazardous and emergency situations arising from the operation of the installation which could affect the habitats. Refer to section 12.</p>

Relevant European (and international) legal instruments

The following Irish and European and international legal instruments are regarded as relevant to this application assessment and have been considered in the drafting of the Recommended Determination.
Industrial Emissions Directive (IED) (2010/75/EU)
Environmental Impact Assessment (EIA) Directive (85/337/EEC, as amended)
Habitats Directive (92/43/EEC) & Birds Directive (79/409/EC)
Water Framework Directive [2000/60/EC]
Air Quality Directives (2008/50/EC and 2004/107/EC)
Groundwater Directive (80/68/EEC) and 2006/118/EC
Medium Combustion Plant Directive (EU) 2015/2193
Regulation (EC) No 1069/2009, (Animal by-products Regulation)
Directive 91/676/EEC, Nitrates Directive
Energy Efficiency Directive.

Other BREF documents and National BAT notes relevant to this assessment

Horizontal BREF	Publication date
Reference Document on the Best Available Techniques on Emissions from Storage	July 2006
Reference Document on the Best Available Techniques for Energy Efficiency	February 2009
Reference Document on the application of Best Available Techniques to Industrial Cooling Systems	December 2001
National BAT notes	Publication date
BAT Guidance Note on Best Available Techniques for the Dairy Processing Sector	2008